KOD:	SIRA NU:	ORİJİNAL NU:
T.T.	**0430**	

TAPU TAHRİR DEFTERİ

BAŞLANGIÇ TARİHİ :	BİTİŞ TARİHİ :

ŞEKLİ:	EBADI:
Ciltli **Ciltsiz** **Ebrulu** **Ebrusuz** **X** **X**	**45 X 16.5**

NUMARALAMA USULÜ:	TOPLAM SAYFA SAYISI:
Varak **Sayfa** **X**	**Numaralı 596**

BOŞ SAYFALARI :

Numaralı boş sayfalar: **6, 21, 39, 40, 80, 81, 149, 159, 178, 225, 245, 301, 330, 491-494, 500**

Numaralandırılmamış boş sayfalar:-

AÇIKLAMALAR: Deftere numara verilirken 189'dan sehven 200'e atlanmıştır.

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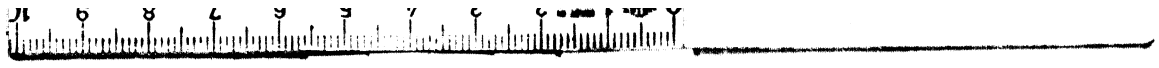

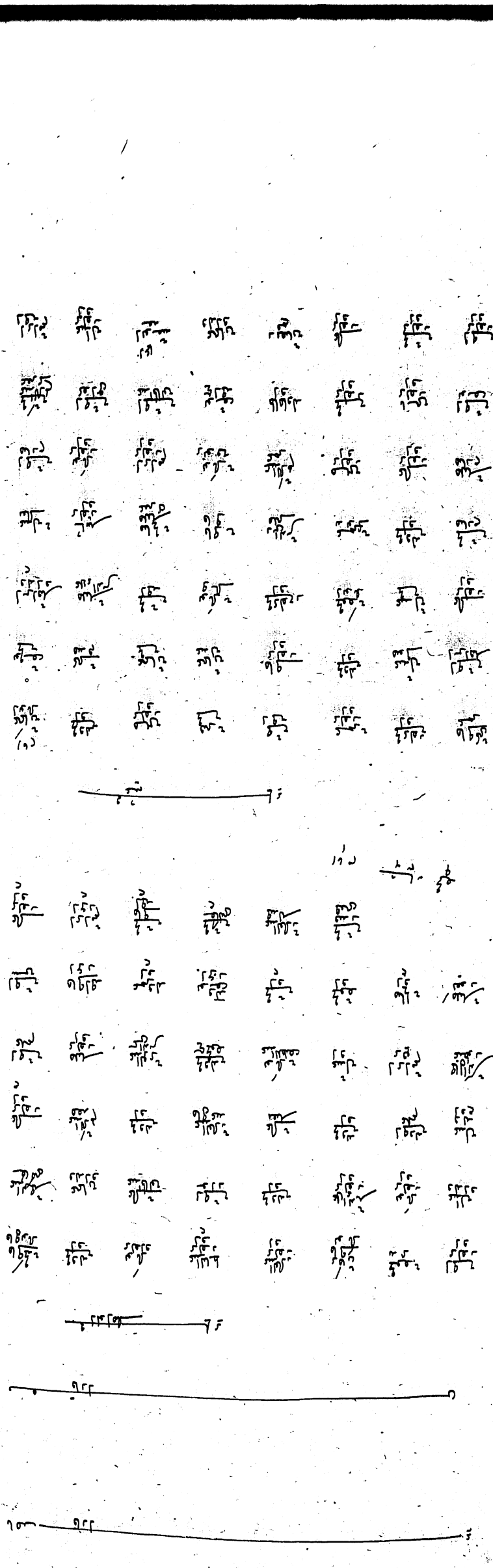

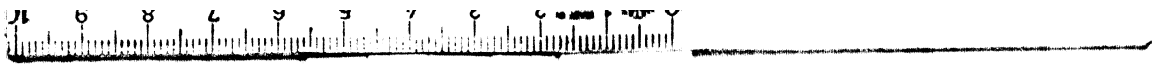

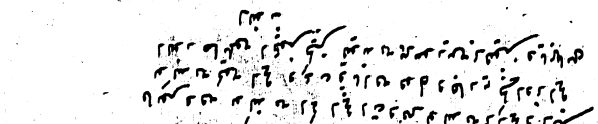

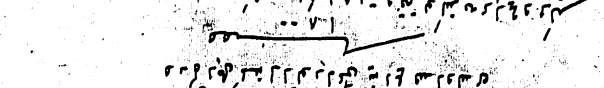

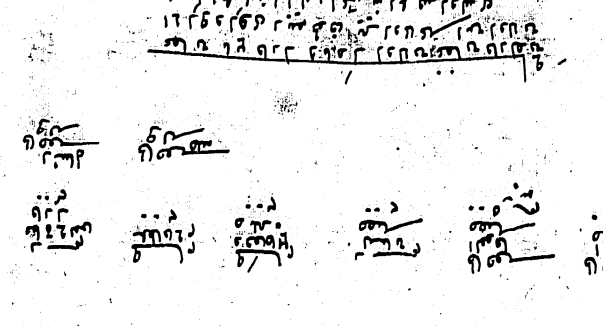

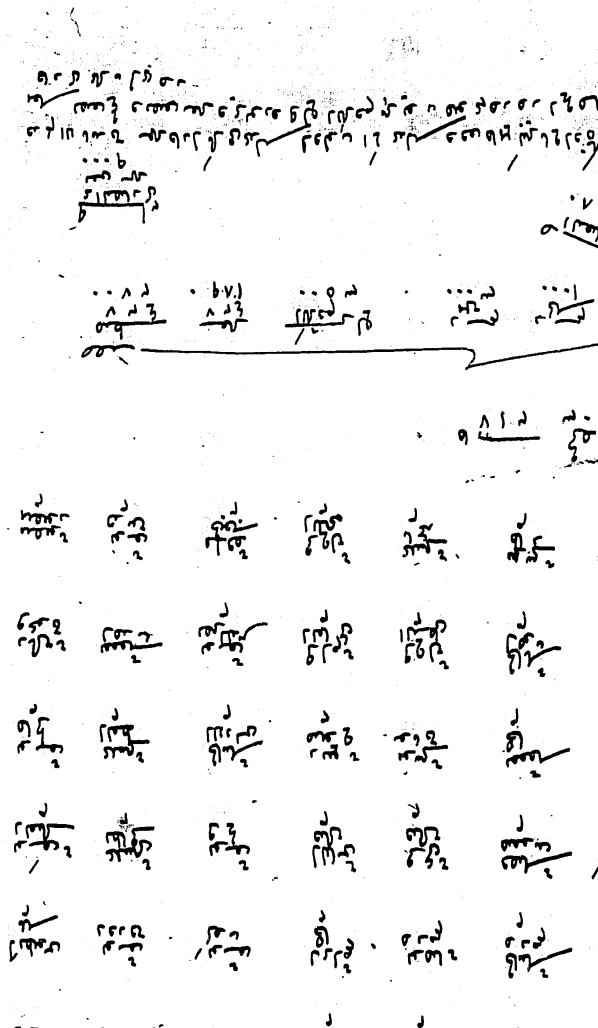

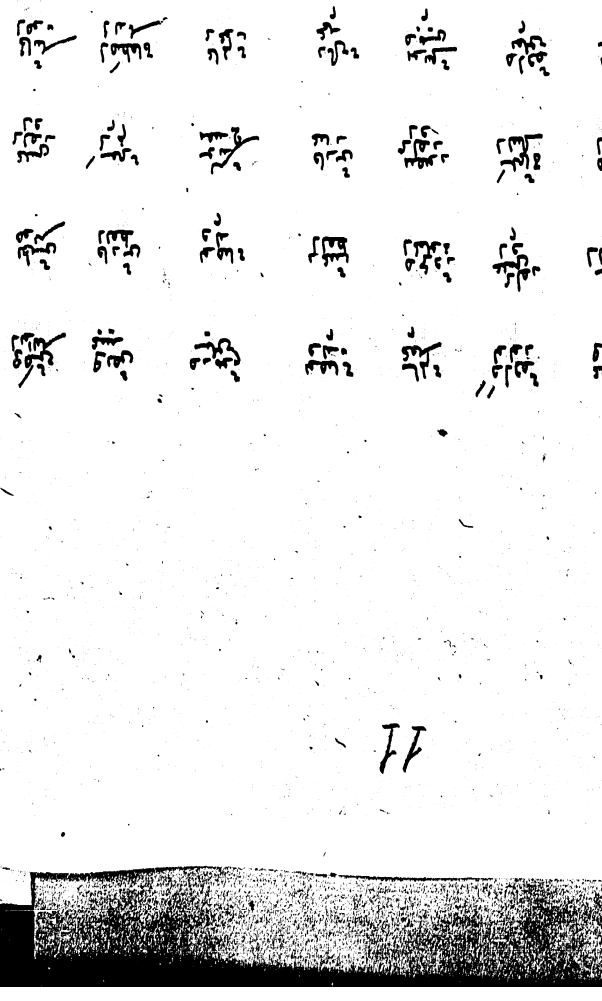

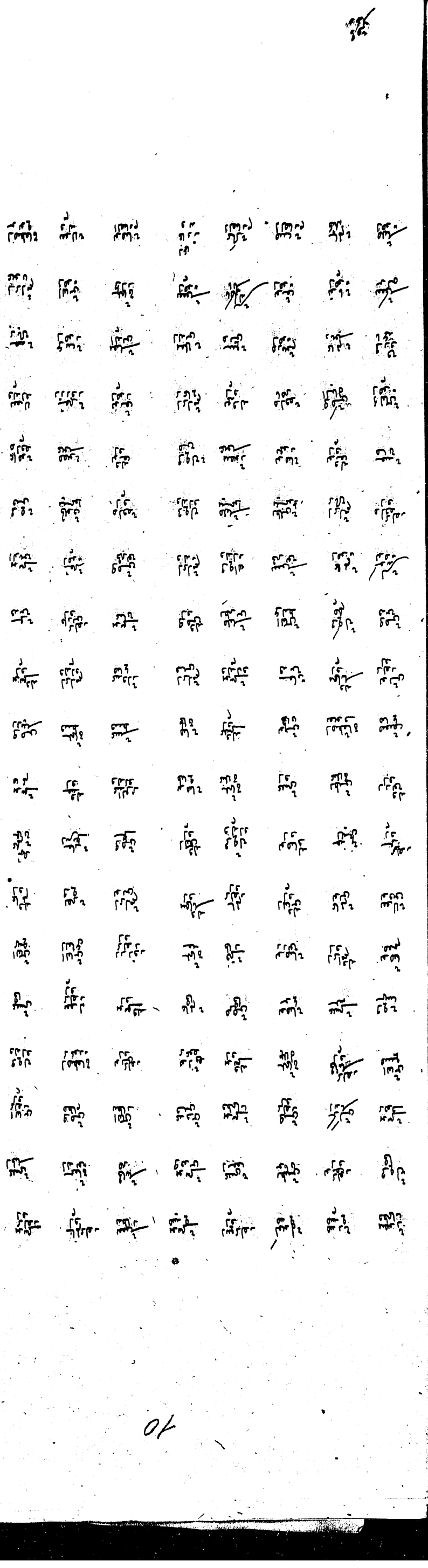

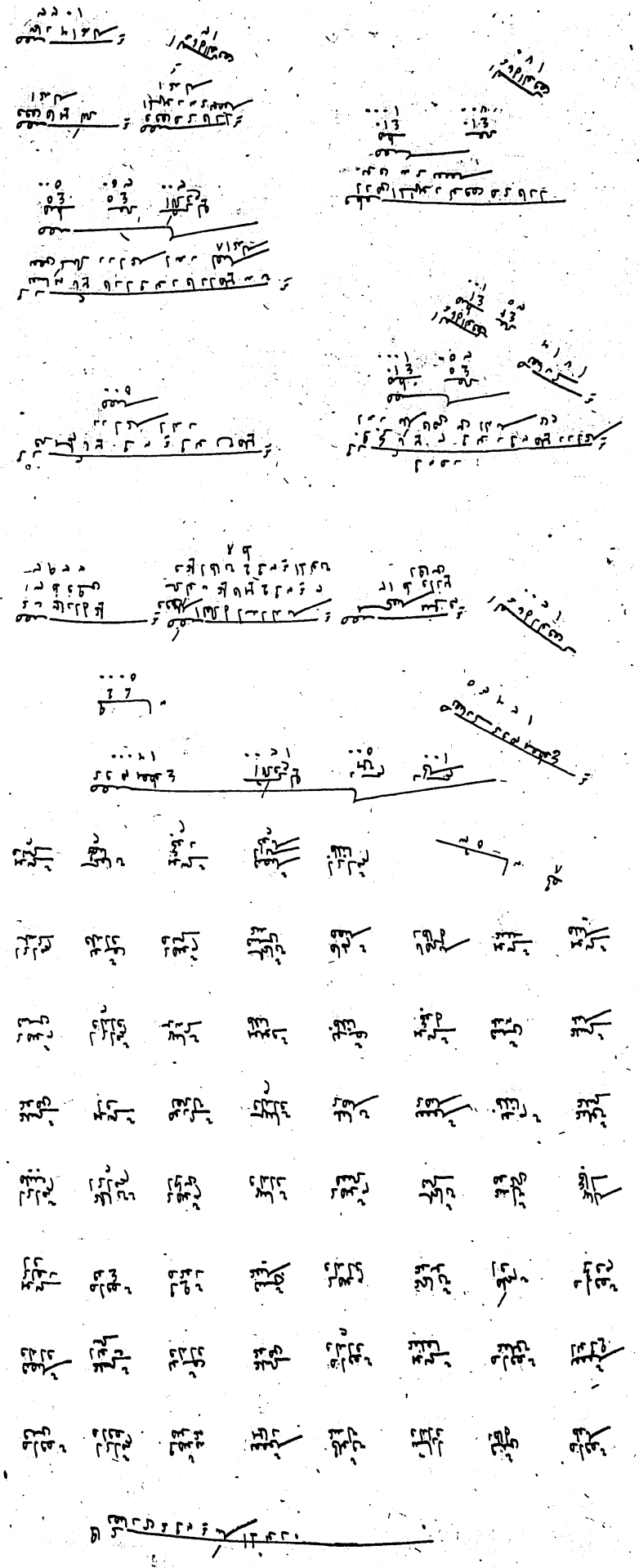

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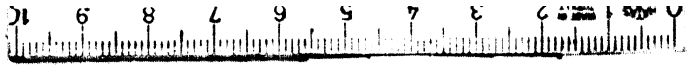

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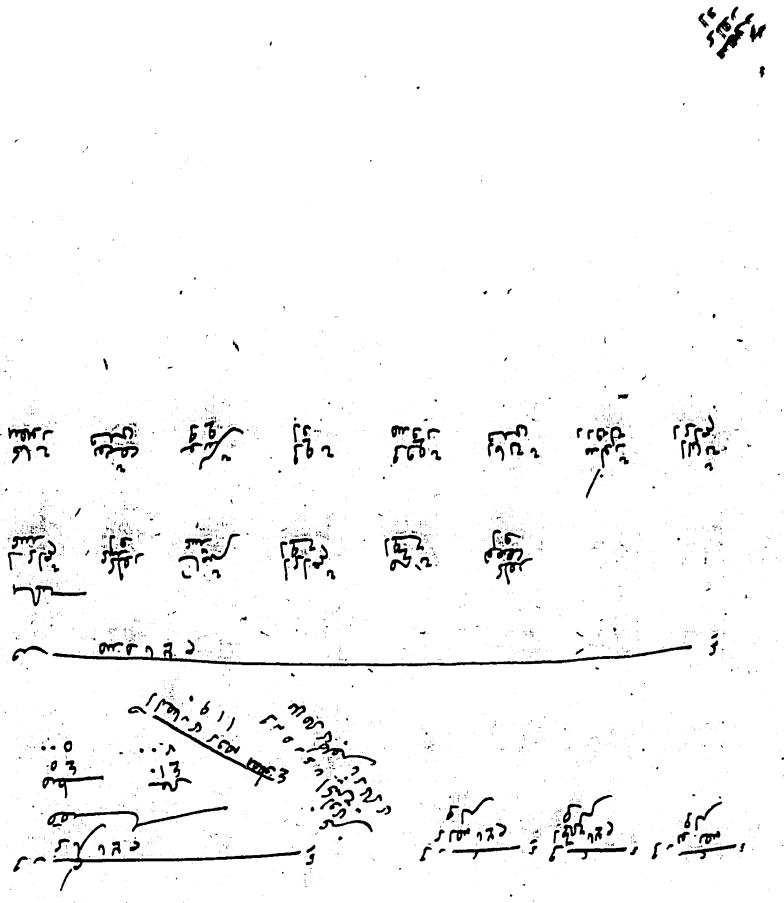

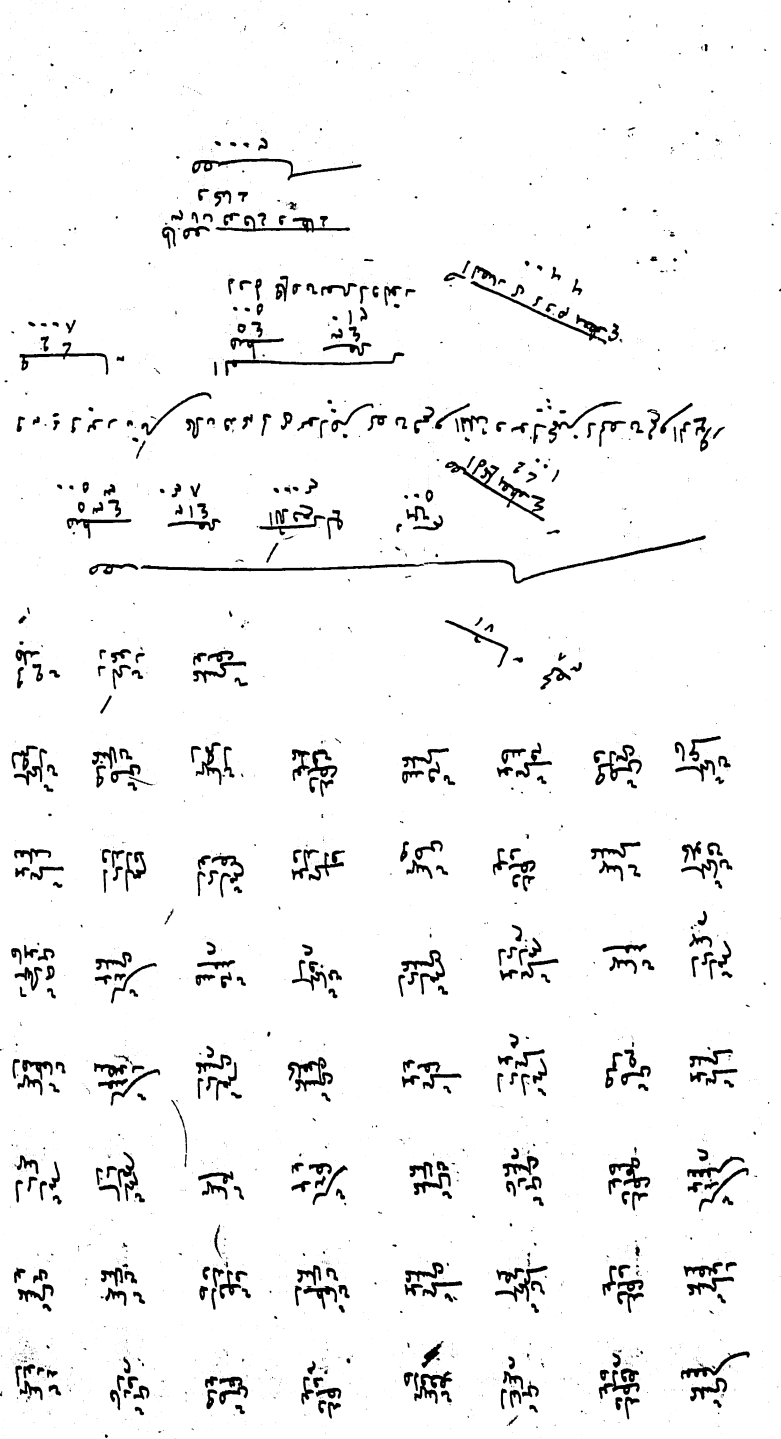

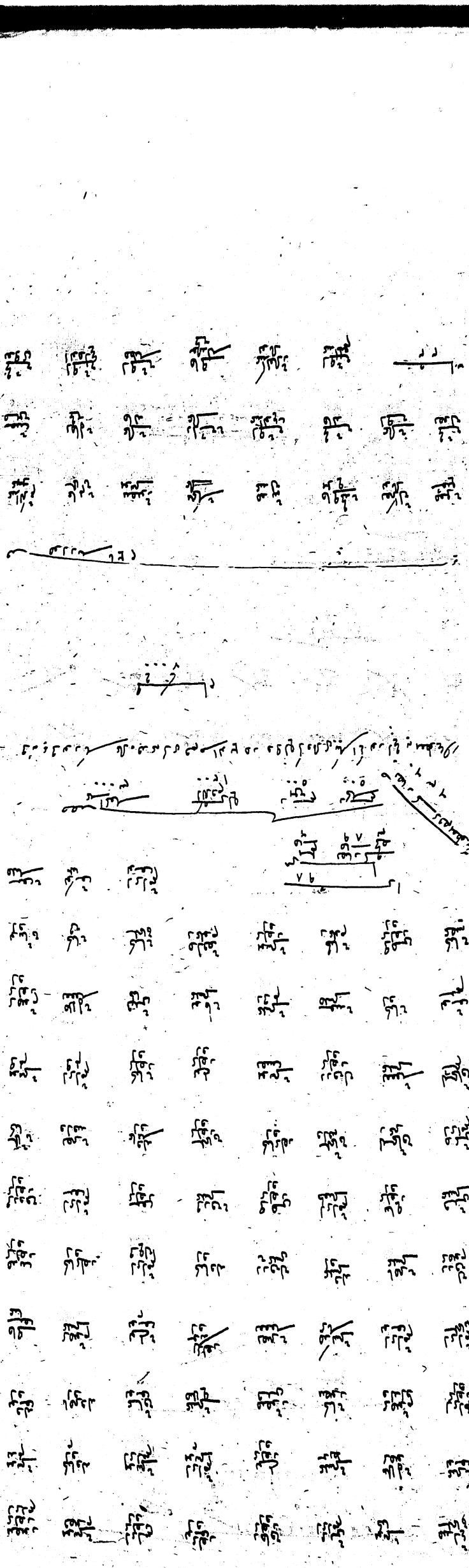

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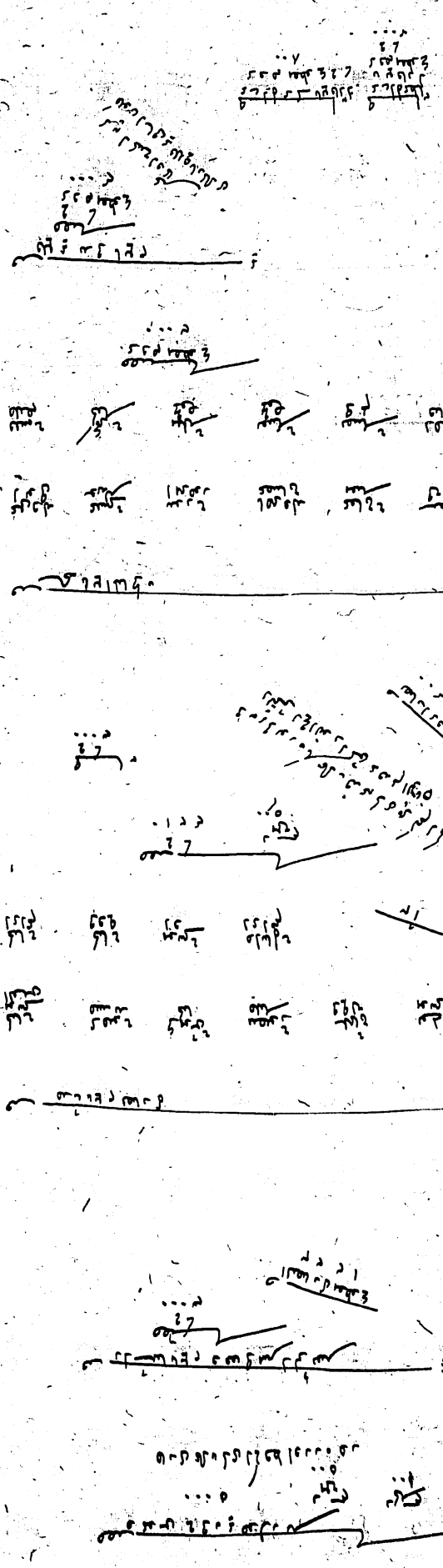

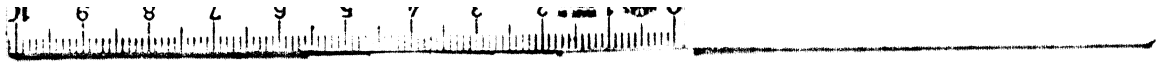

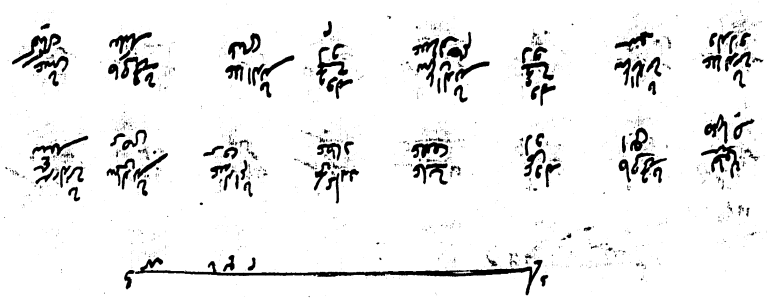

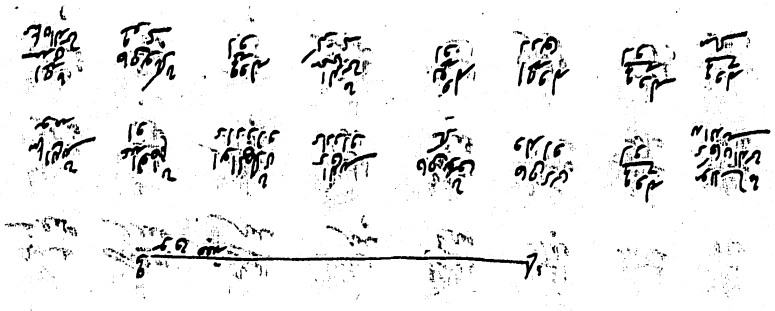

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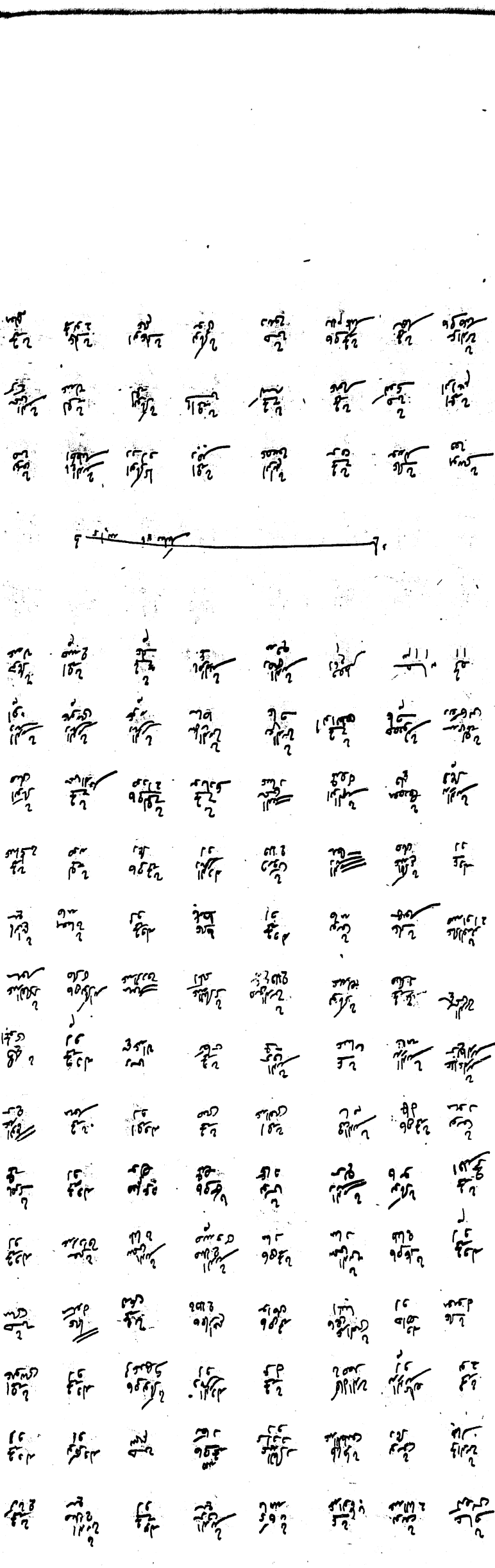
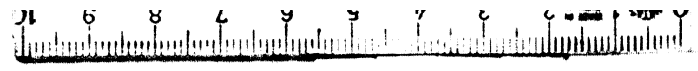
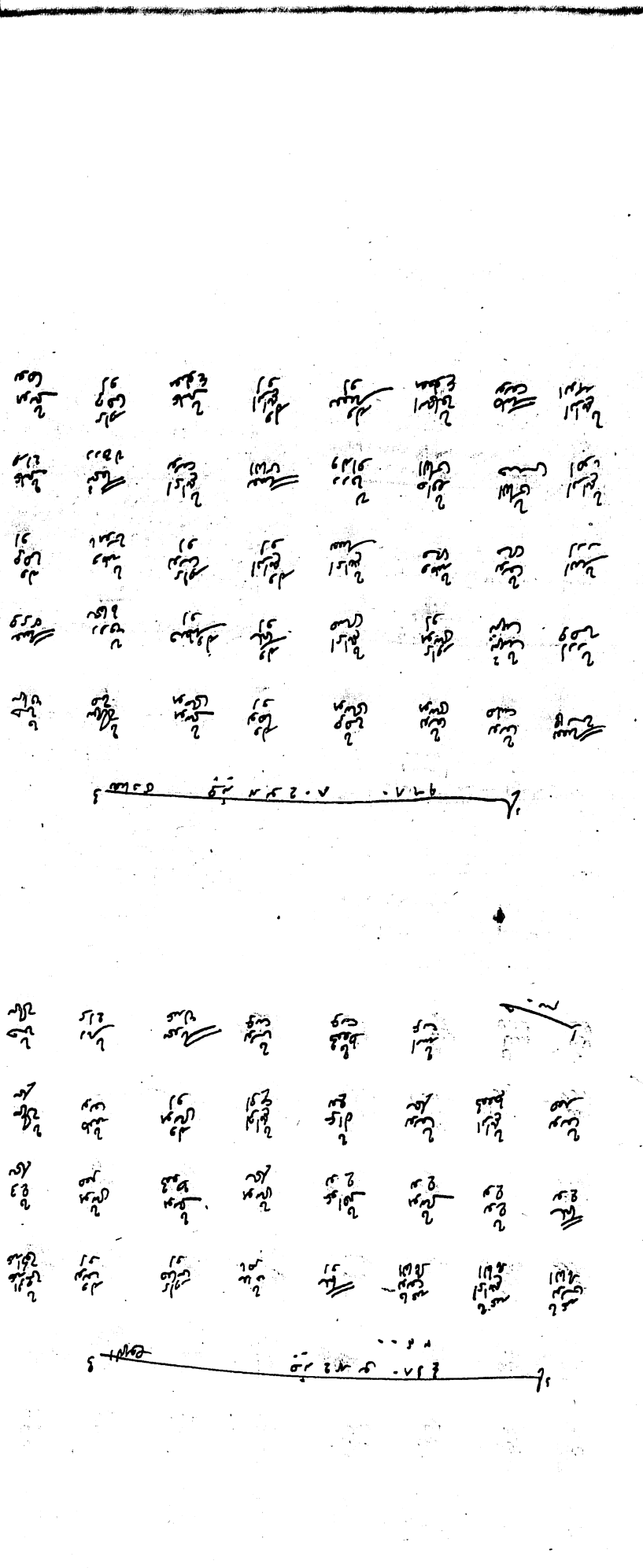






فصل اول: مقدمات و کلیات

۱.۱ تعریف و تاریخچه

تعریف: هر دستگاه که ورودی آن را دریافت، پردازش و به خروجی تبدیل کند، یک سیستم نامیده می‌شود. در این فصل با مفاهیم پایه‌ای که در تمام فصل‌های بعدی به کار می‌روند آشنا می‌شویم.

۱.۲ ویژگی‌های اصلی

۱.۲.۱ پاسخ‌دهی

۱.۲.۲ پایداری

۱.۲.۳ خطی بودن

۱.۳ مثال‌ها

مثال ۱.۱: یک مدار RC ساده را در نظر بگیرید. ورودی ولتاژ منبع و خروجی ولتاژ خازن است.

مثال ۱.۲: یک سیستم گرمایشی ساختمان را در نظر بگیرید. ورودی توان بخاری و خروجی دمای اتاق است.

۱.۴ تمرین‌ها

تمرین ۱.۱: برای هر یک از سیستم‌های زیر ورودی، خروجی و متغیرهای حالت را مشخص کنید.

تمرین ۱.۲: ثابت زمانی سیستم مثال ۱.۱ را برای $R = 1\,k\Omega$ و $C = 1\,\mu F$ محاسبه کنید.

۱.۵ جمع‌بندی

در این فصل با مفاهیم پایه‌ای سیستم‌ها آشنا شدیم. در فصل بعد به مدل‌سازی ریاضی خواهیم پرداخت.

فصل دوم: مدل‌سازی ریاضی

۲.۱ مقدمه

۲.۲ معادلات دیفرانسیل

۲.۲.۱ مرتبه و درجه

۲.۲.۲ خطی و غیرخطی

۲.۳ تابع تبدیل

۲.۳.۱ تعریف

۲.۳.۲ قطب‌ها و صفرها

۲.۴ بلوک‌دیاگرام

۲.۵ نمودار جریان سیگنال

۲.۶ مثال‌ها

مثال ۲.۱: مدل‌سازی سیستم جرم-فنر-دمپر.

مثال ۲.۲: مدل‌سازی مدار RLC سری.

۲.۷ تمرین‌ها

تمرین ۲.۱: تابع تبدیل سیستم مثال ۲.۱ را به دست آورید.

تمرین ۲.۲: بلوک‌دیاگرام سیستم مثال ۲.۲ را رسم کنید.

۲.۸ جمع‌بندی

فصل سوم: تحلیل پاسخ زمانی

۳.۱ مقدمه

۳.۲ پاسخ پله

۳.۲.۱ مشخصات پاسخ پله

۳.۲.۲ خطای حالت دائمی

۳.۳ پاسخ ضربه

۳.۴ پاسخ شیب

۳.۵ سیستم‌های مرتبه اول

۳.۵.۱ ثابت زمانی

۳.۵.۲ پاسخ پله

۳.۶ سیستم‌های مرتبه دوم

۳.۶.۱ نسبت میرایی و فرکانس طبیعی

۳.۶.۲ حالت‌های میرایی

۳.۶.۳ مشخصات پاسخ پله

۳.۷ مثال‌ها

مثال ۳.۱: تحلیل پاسخ پله سیستم مرتبه اول.

مثال ۳.۲: تحلیل پاسخ پله سیستم مرتبه دوم.

۳.۸ تمرین‌ها

تمرین ۳.۱: زمان نشست سیستم مثال ۳.۲ را محاسبه کنید.

تمرین ۳.۲: فراجهش سیستم مثال ۳.۲ را محاسبه کنید.

۳.۹ جمع‌بندی

فصل چهارم: تحلیل پایداری

۴.۱ مقدمه

۴.۲ پایداری ورودی-خروجی

۴.۳ پایداری داخلی

۴.۴ معیار راث-هورویتز

۴.۴.۱ آرایه راث

۴.۴.۲ حالت‌های خاص

۴.۵ مثال‌ها

مثال ۴.۱: بررسی پایداری با معیار راث-هورویتز.

مثال ۴.۲: تعیین بازه پارامتر برای پایداری.

۴.۶ تمرین‌ها

تمرین ۴.۱: پایداری سیستم حلقه‌بسته با $K = 10$ را بررسی کنید.

تمرین ۴.۲: بازه K برای پایداری را به دست آورید.

۴.۷ جمع‌بندی

فصل پنجم: تحلیل فرکانسی

۵.۱ مقدمه

۵.۲ پاسخ فرکانسی

۵.۲.۱ تعریف

۵.۲.۲ رابطه با تابع تبدیل

۵.۳ نمودار بود

۵.۳.۱ رسم تقریبی

۵.۳.۲ حاشیه بهره و حاشیه فاز

۵.۴ نمودار نایکوئیست

۵.۴.۱ رسم تقریبی

۵.۴.۲ پایداری با معیار نایکوئیست

۵.۵ مثال‌ها

مثال ۵.۱: رسم نمودار بود سیستم مرتبه اول.

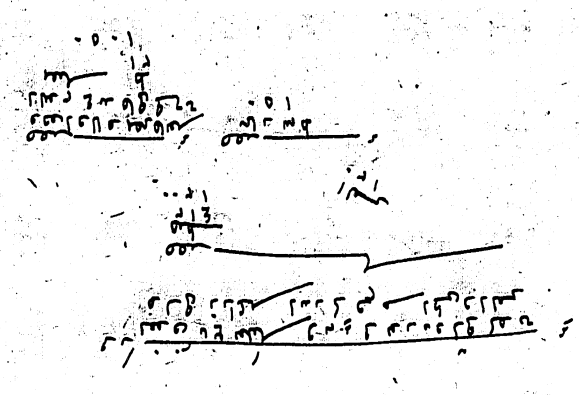
مثال ۵.۲: رسم نمودار بود سیستم مرتبه دوم.

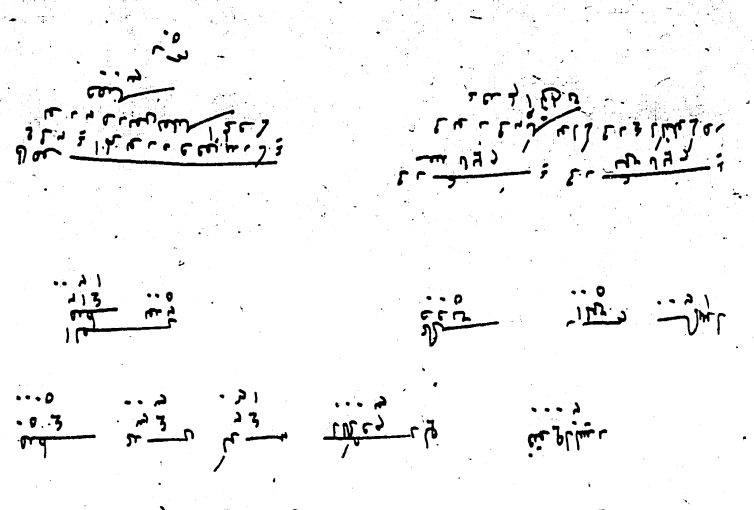
۵.۶ تمرین‌ها

تمرین ۵.۱: حاشیه بهره و حاشیه فاز سیستم مثال ۵.۲ را محاسبه کنید.

تمرین ۵.۲: پایداری سیستم حلقه‌بسته با $K = 5$ را با نایکوئیست بررسی کنید.

۵.۷ جمع‌بندی





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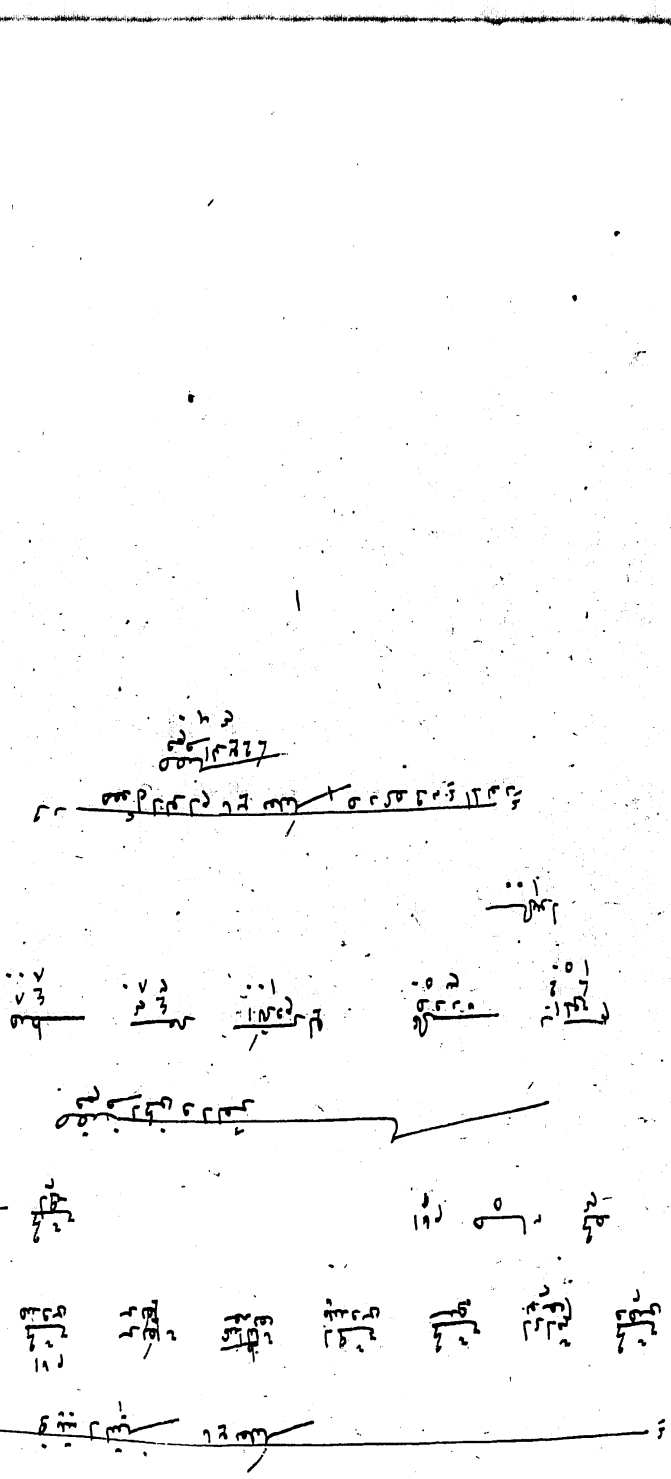

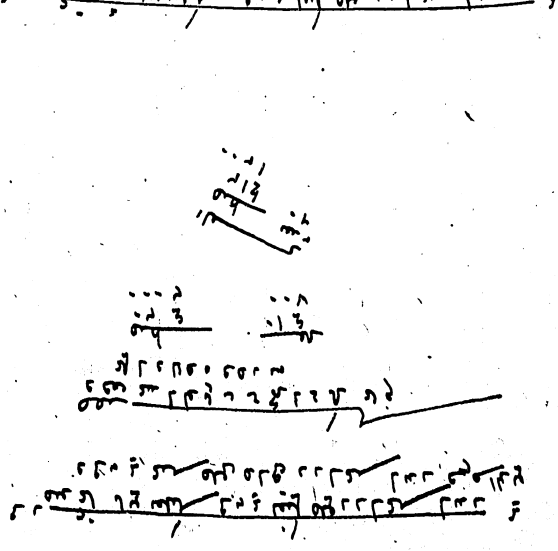

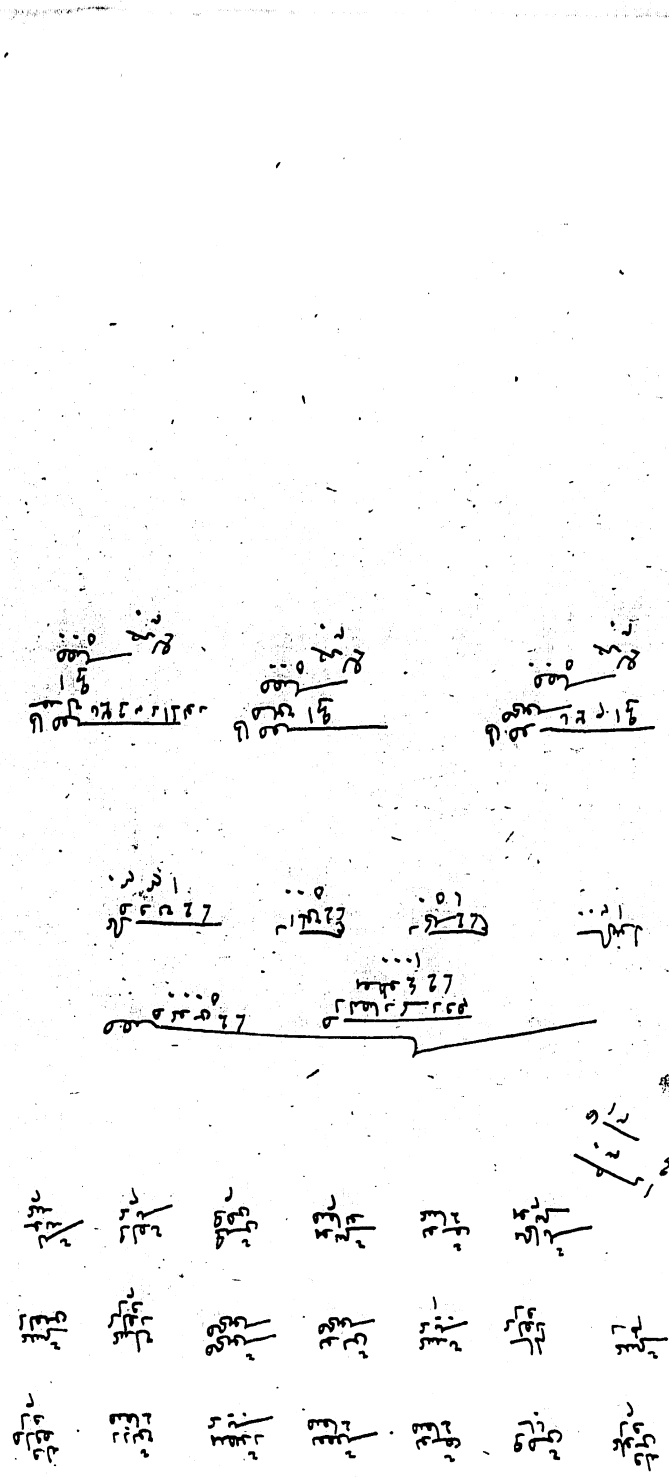

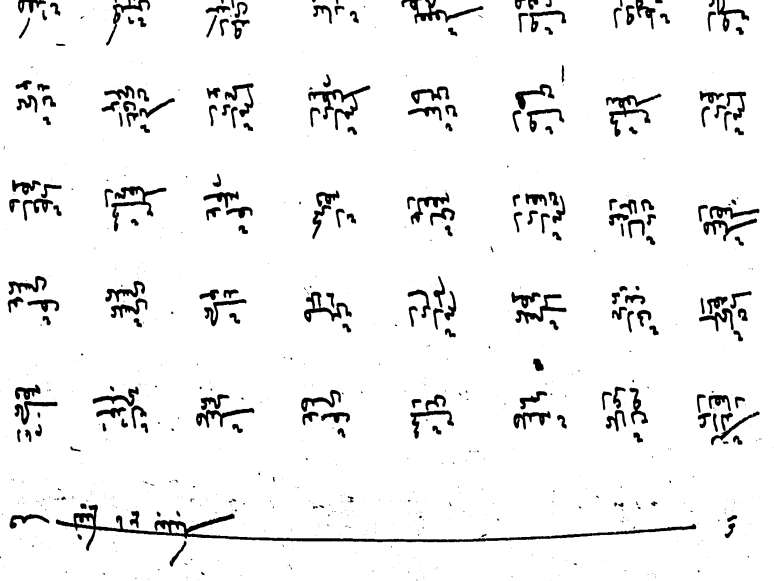

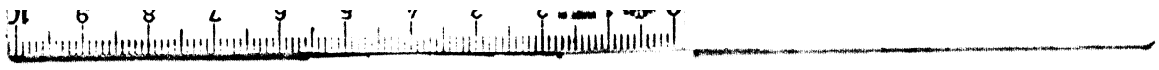

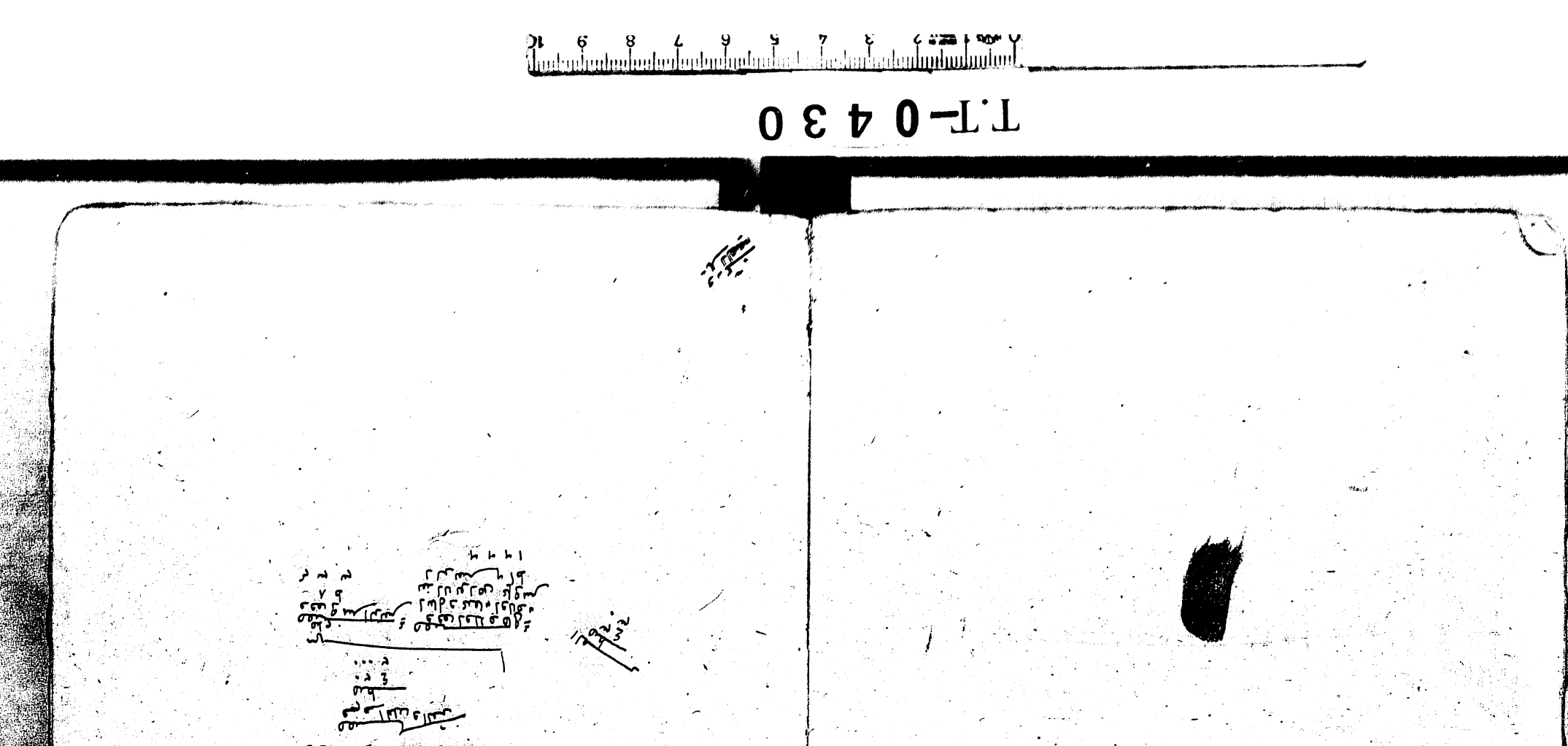

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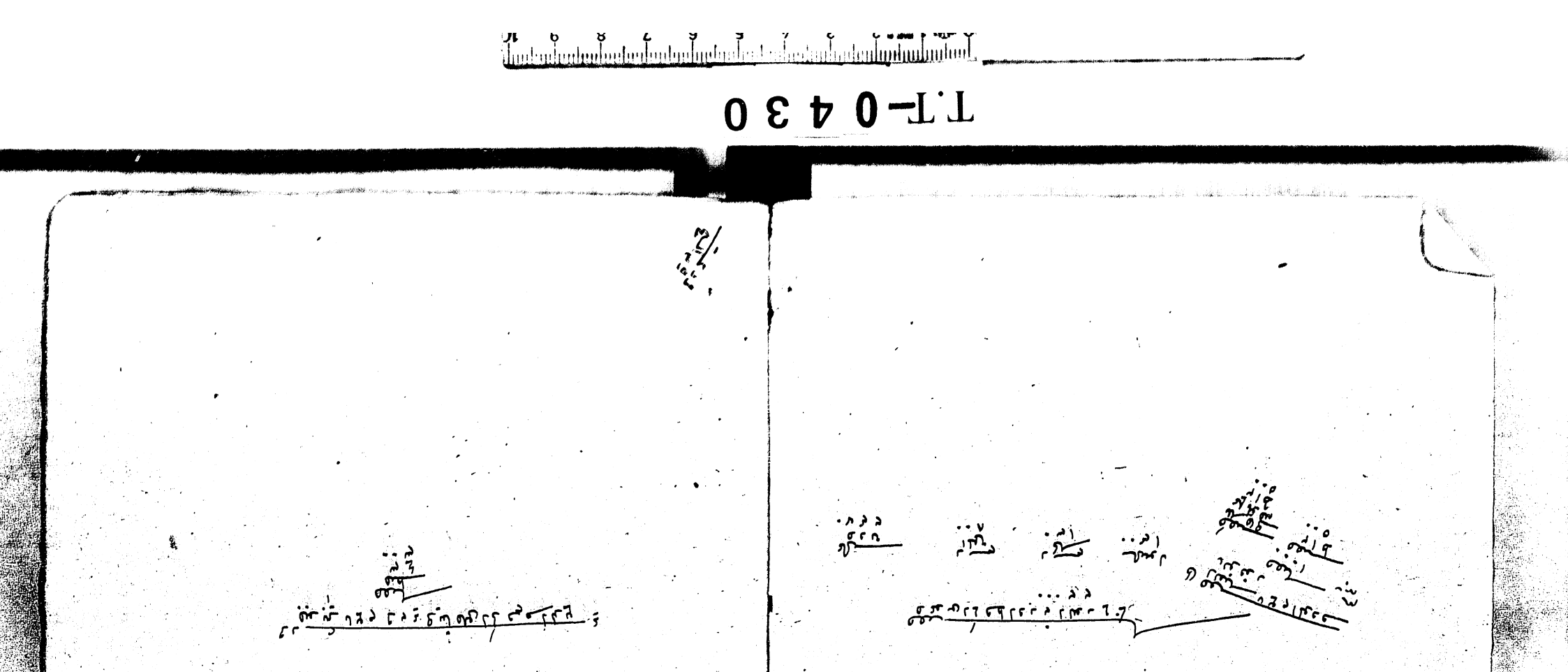

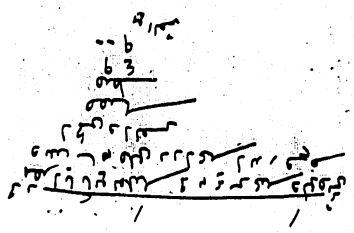

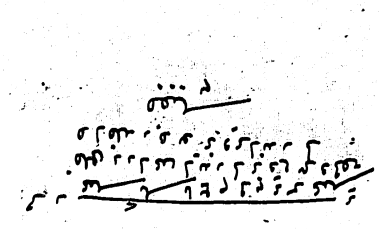

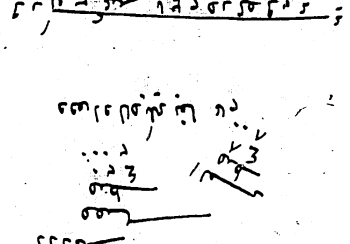

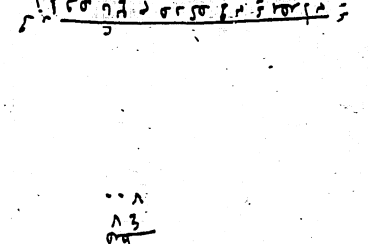

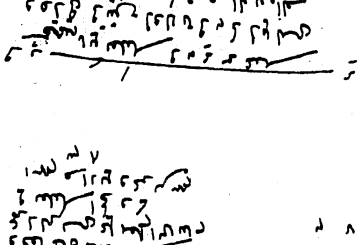

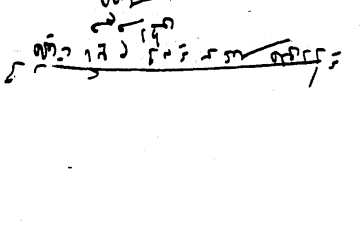

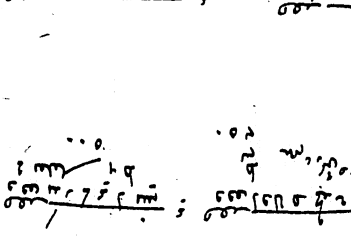

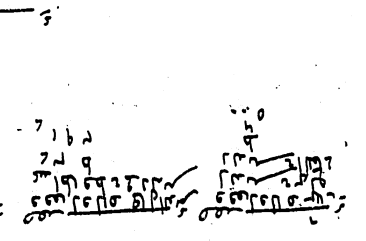

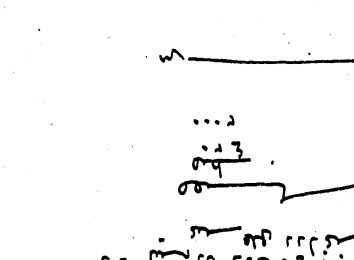

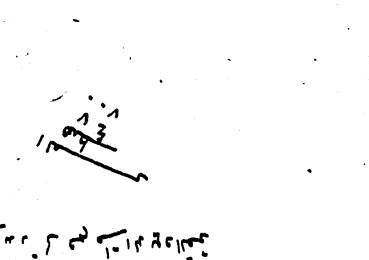

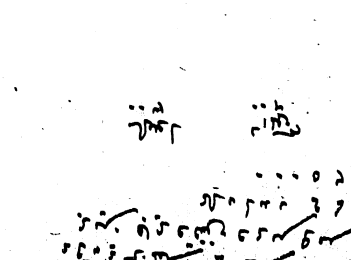

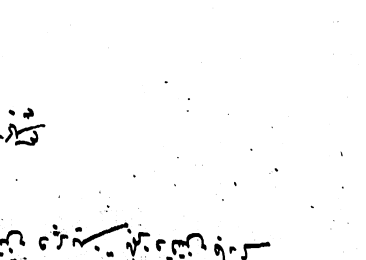

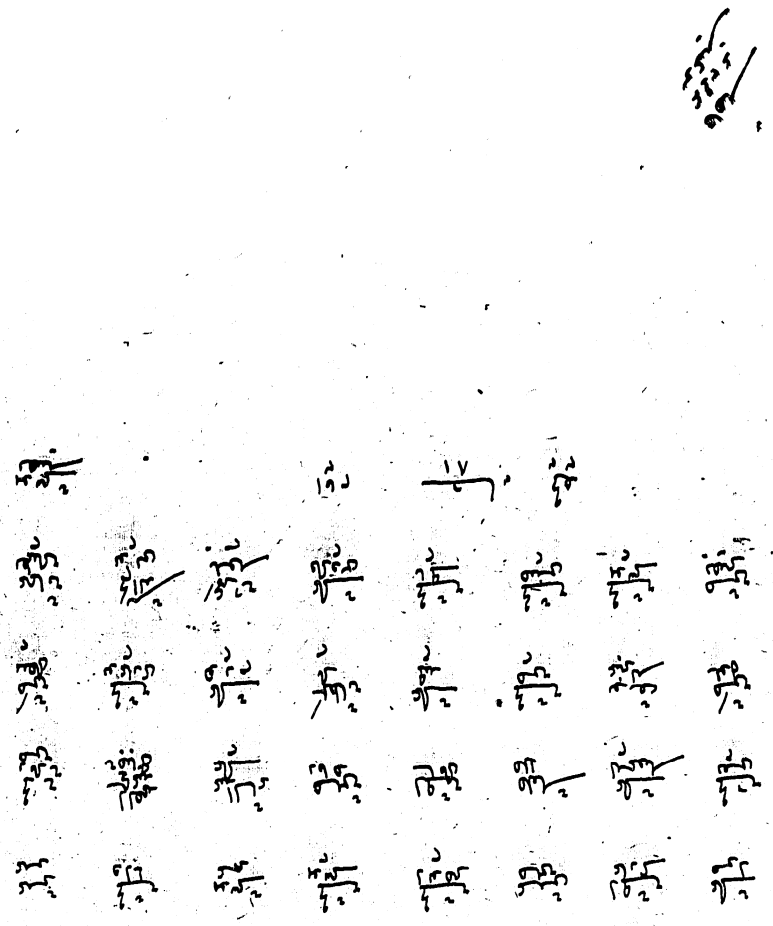

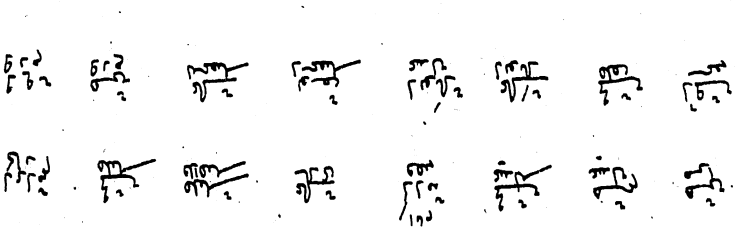

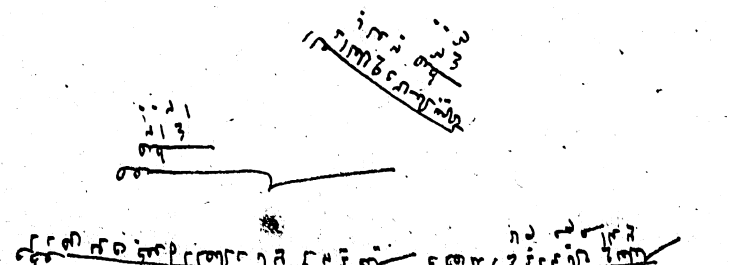

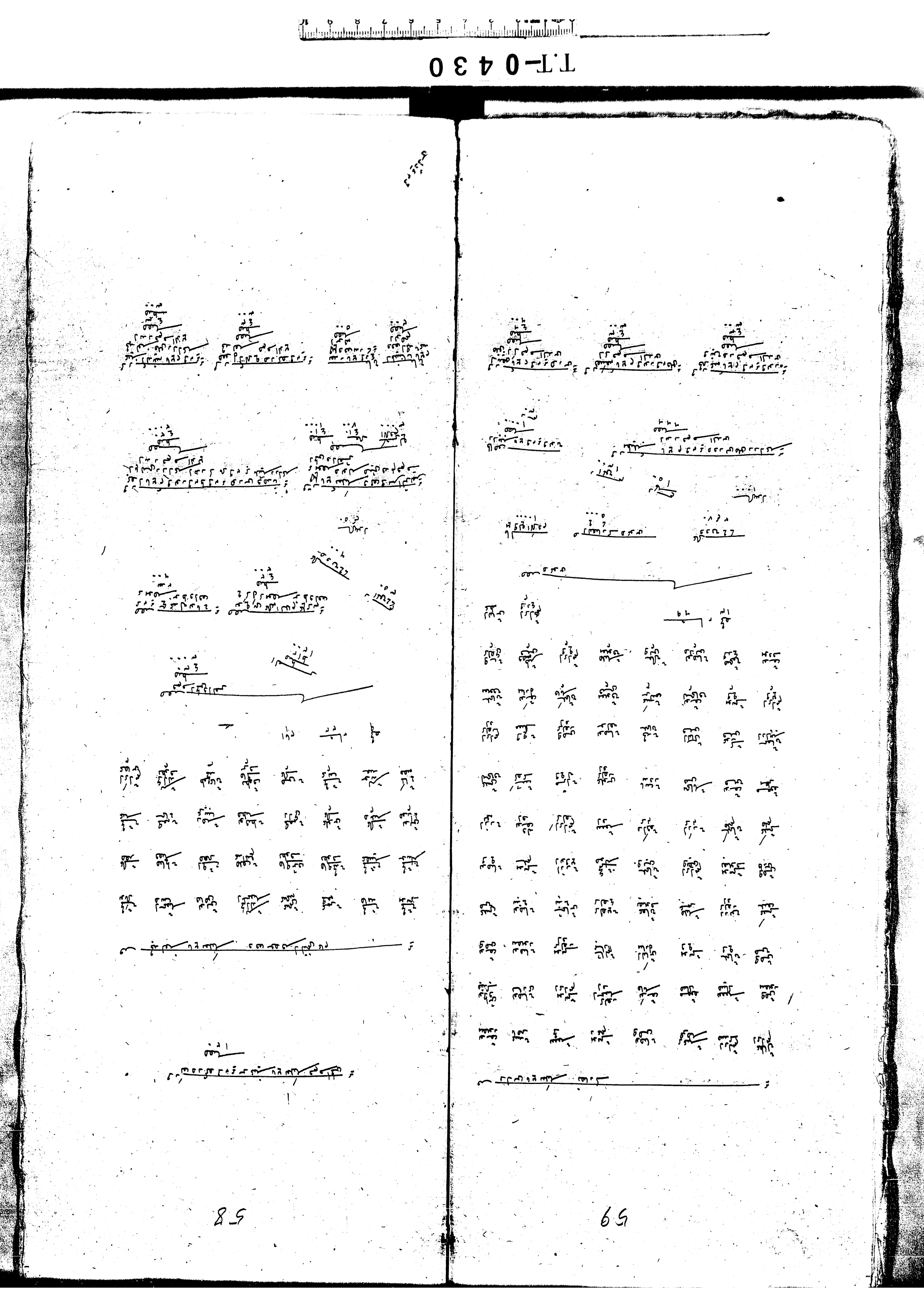

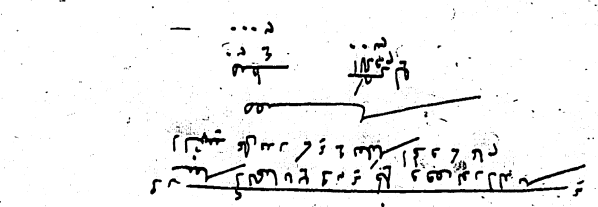

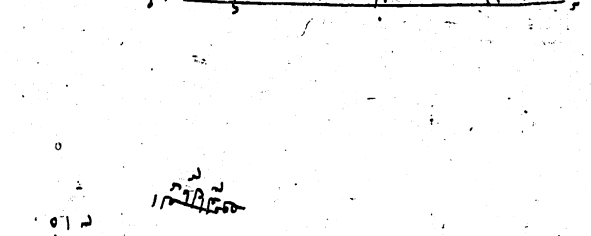

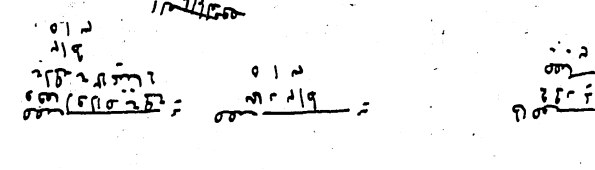

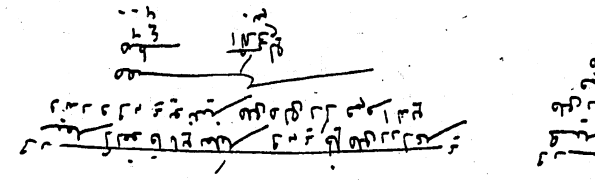

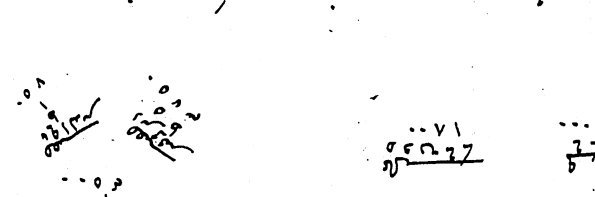

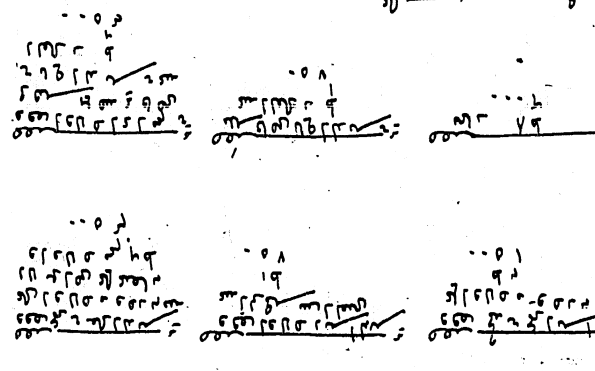

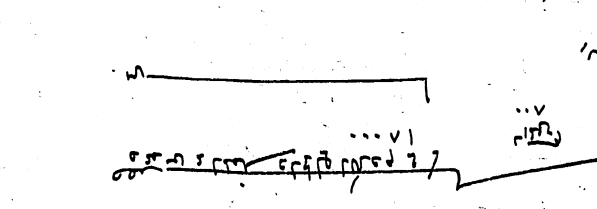

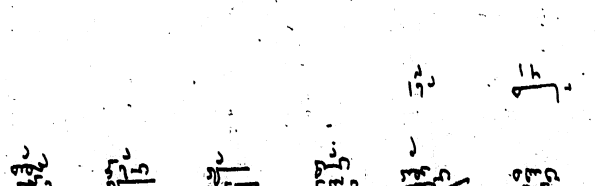

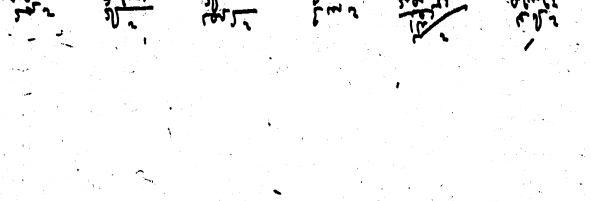

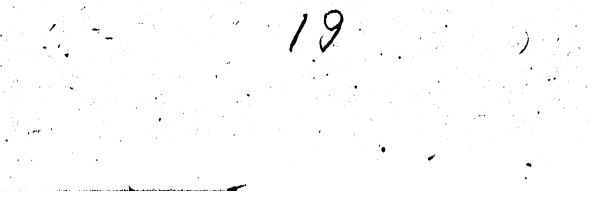

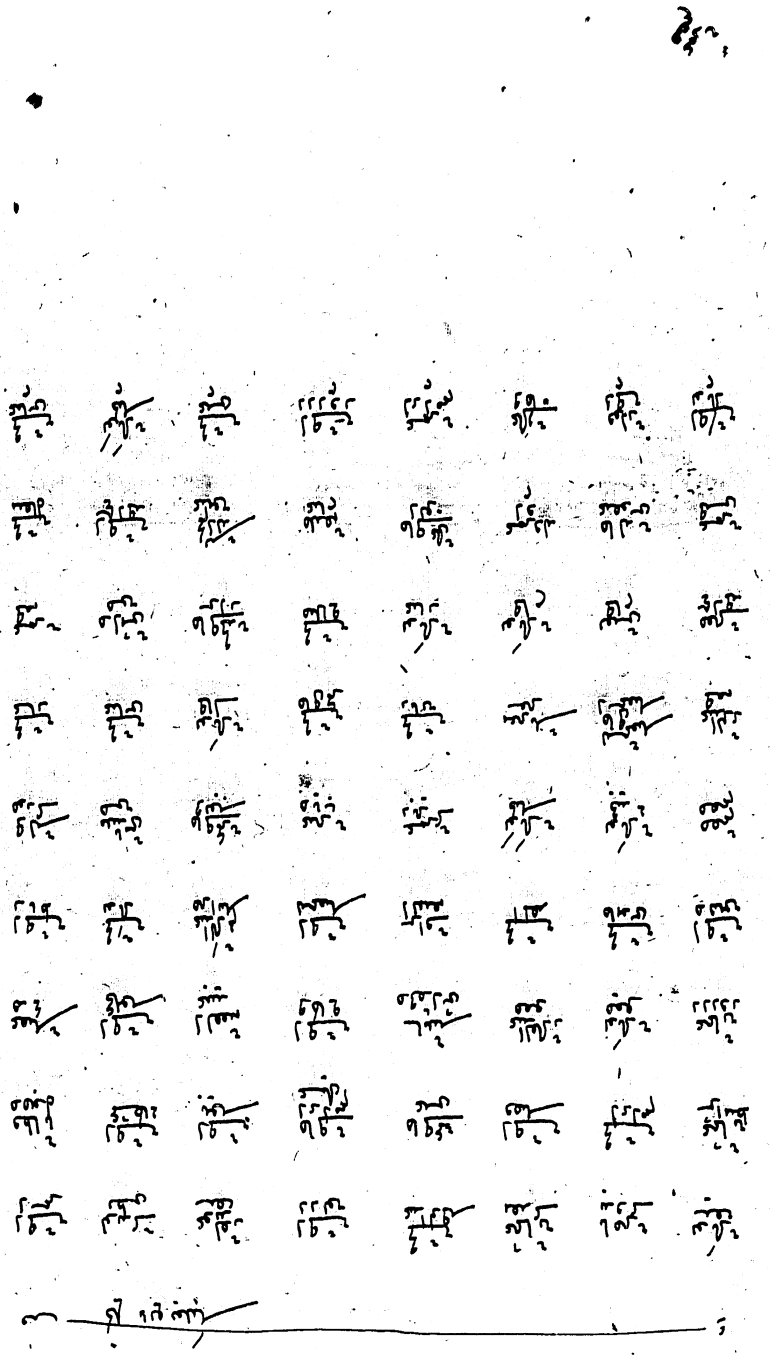

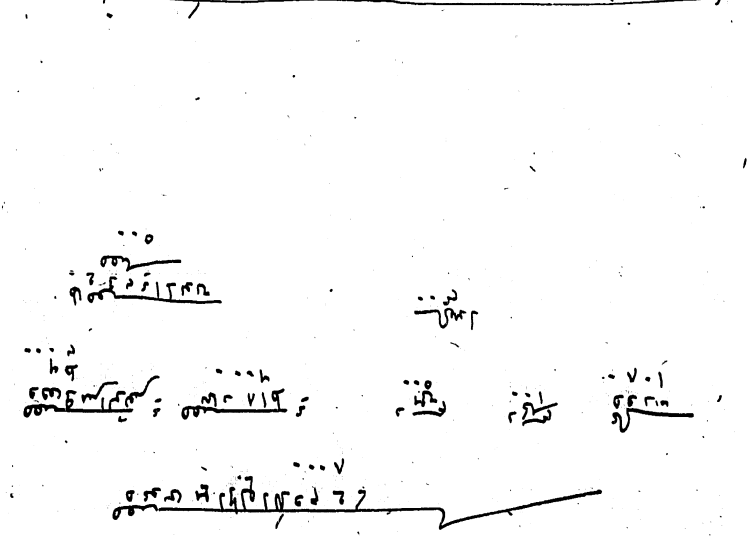

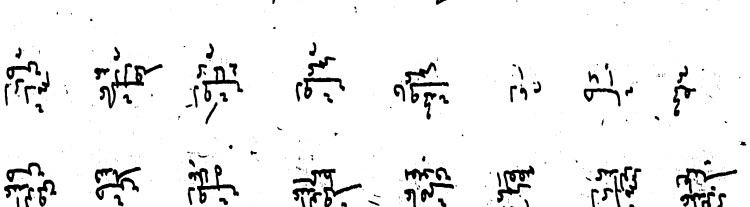

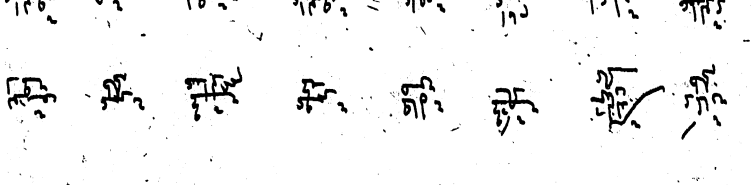

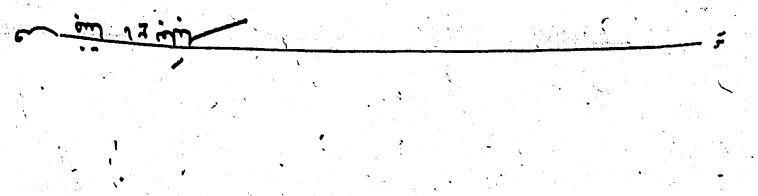

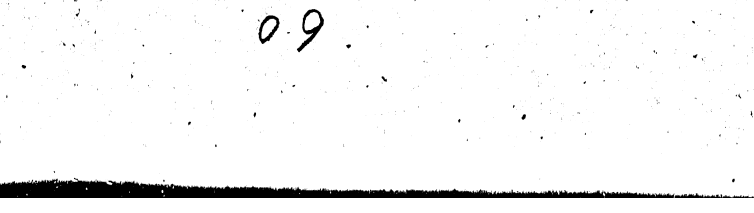

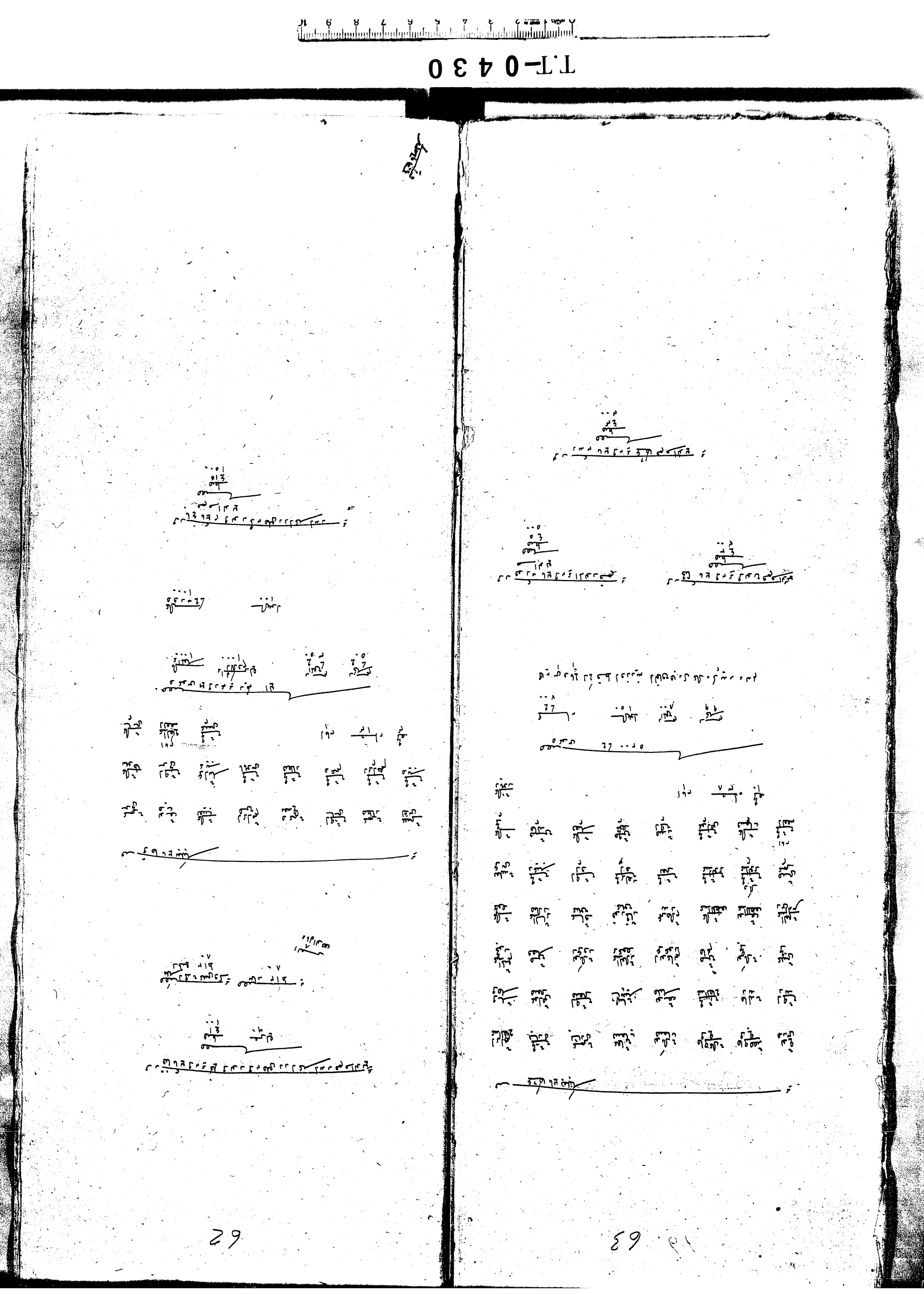

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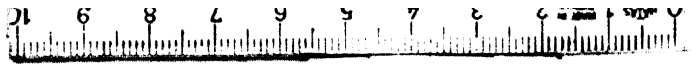

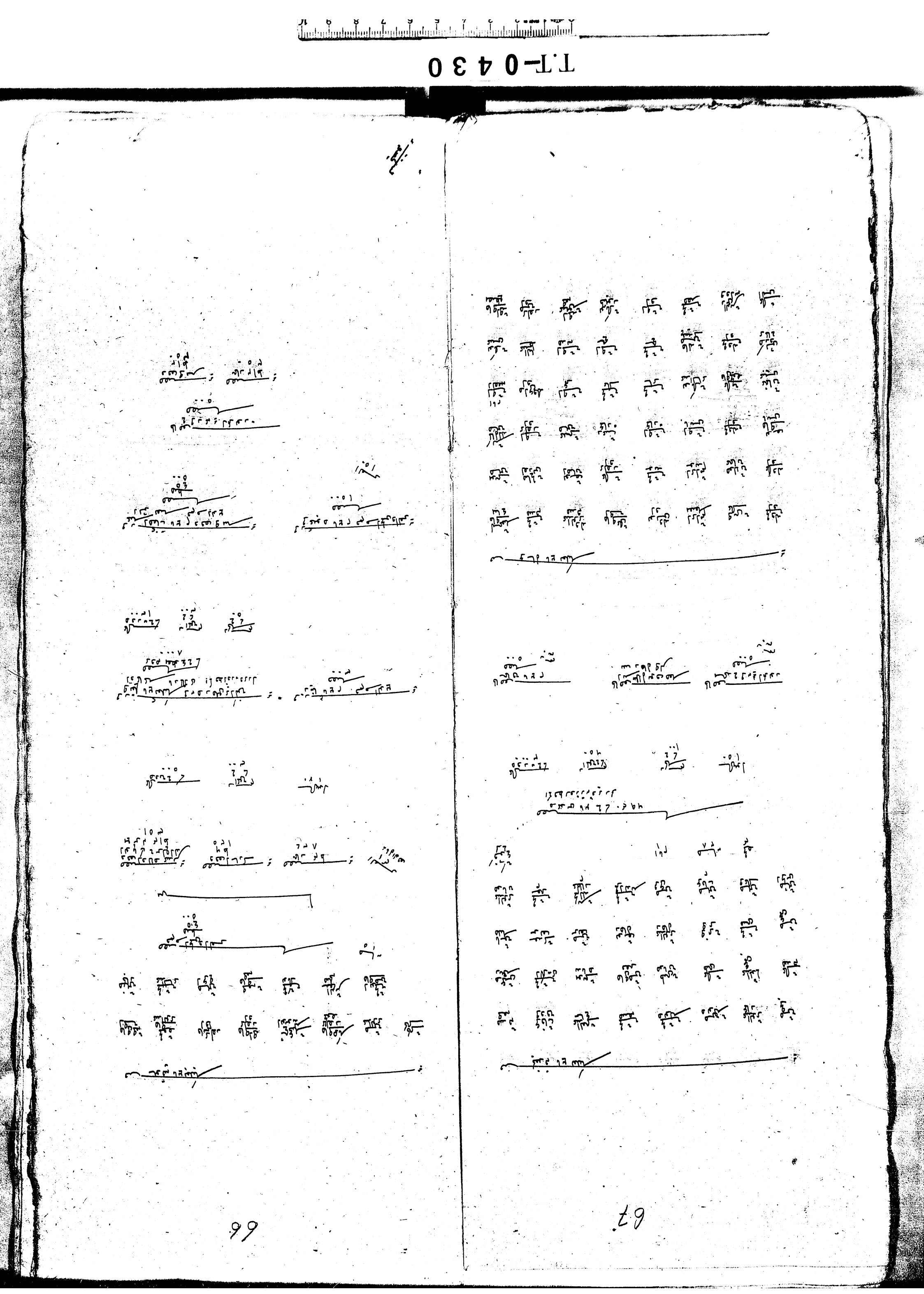

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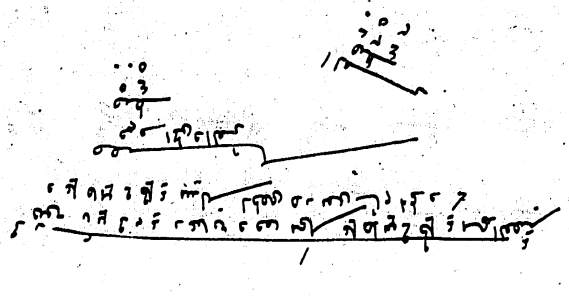

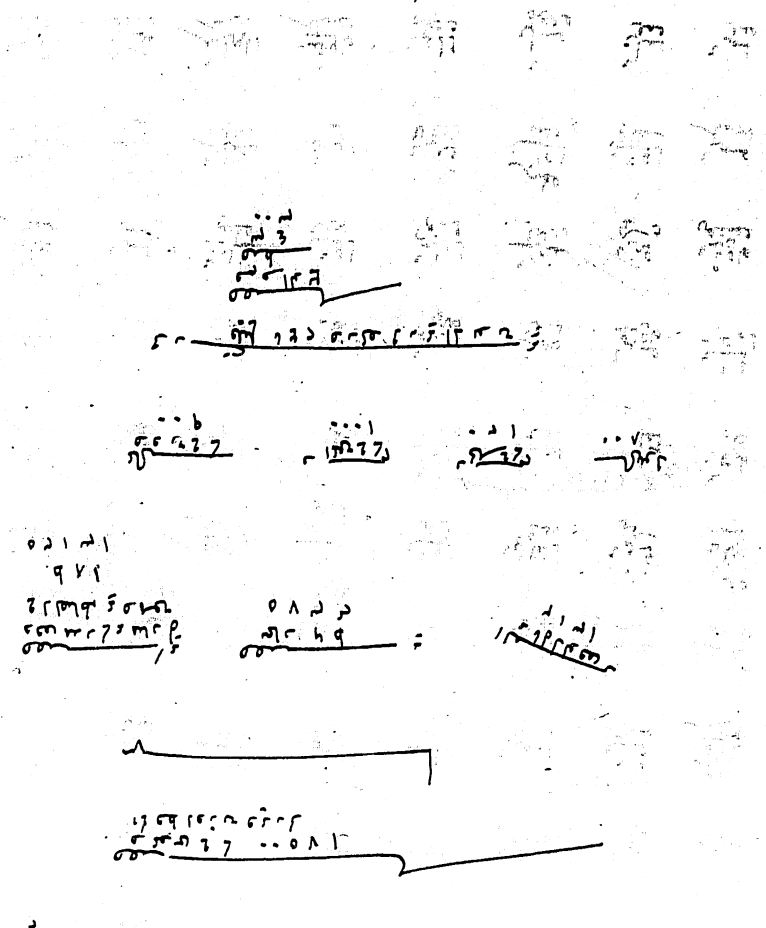

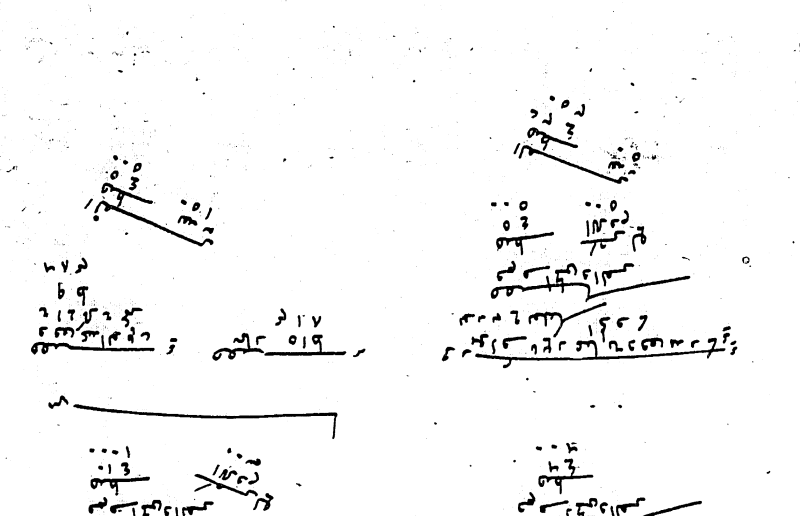

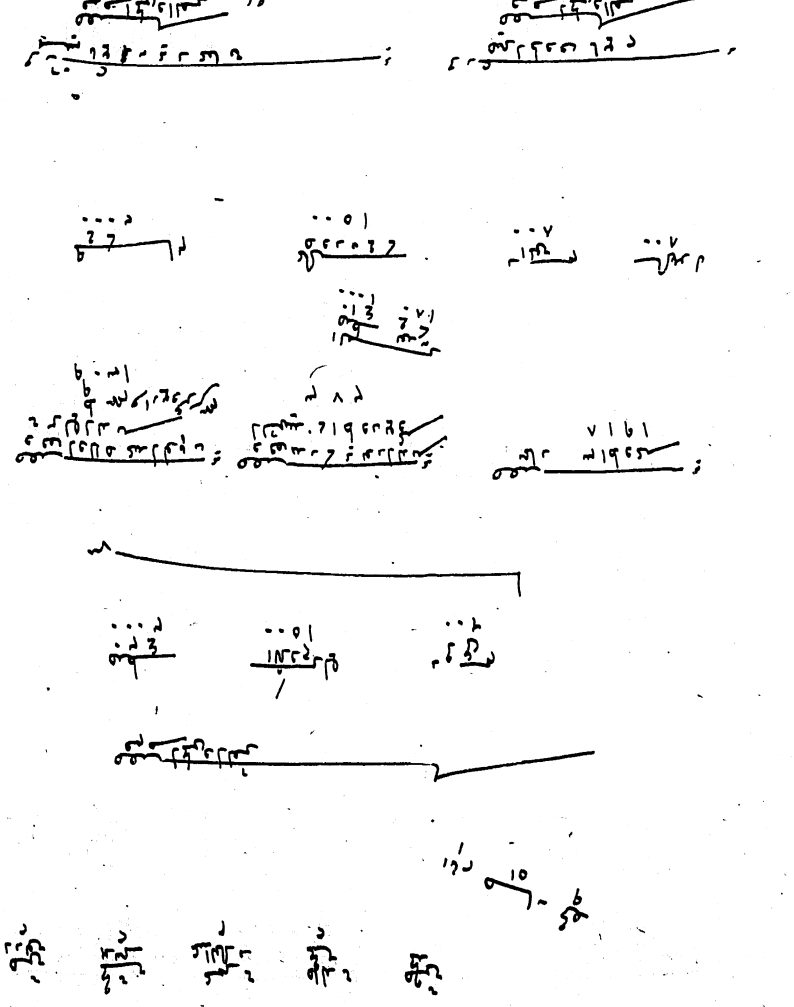

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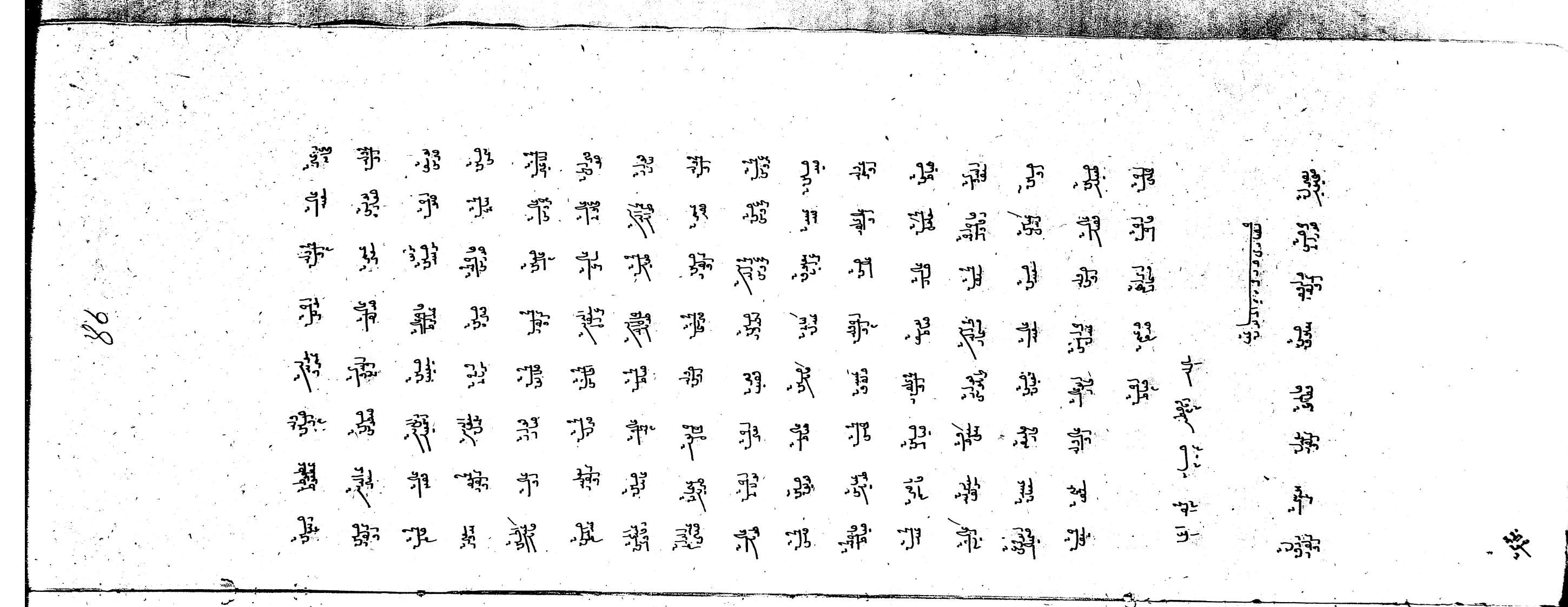

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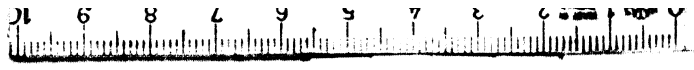

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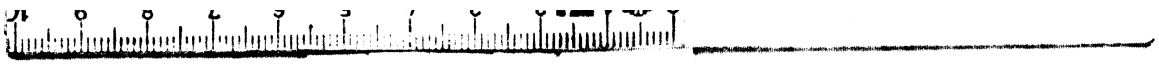

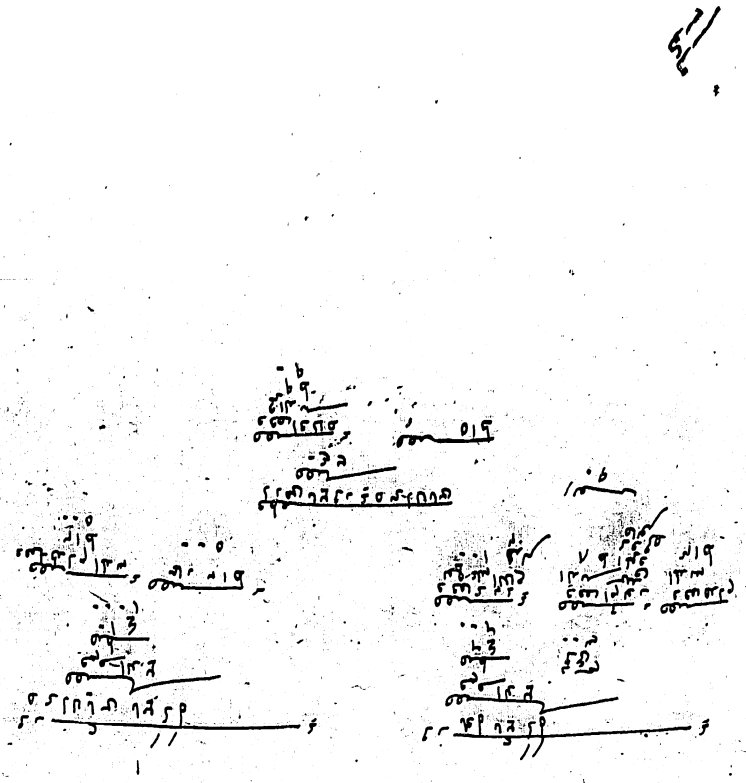

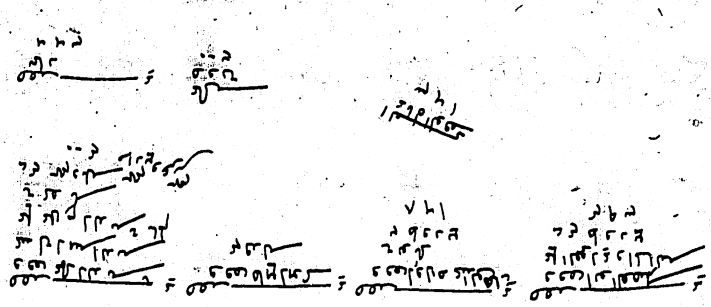

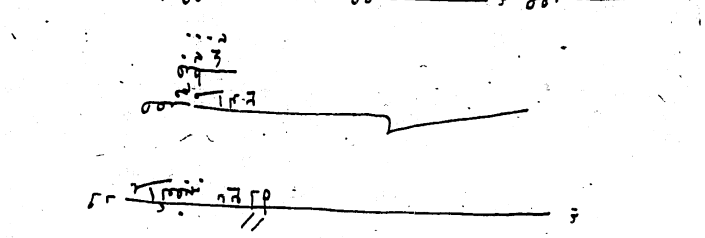

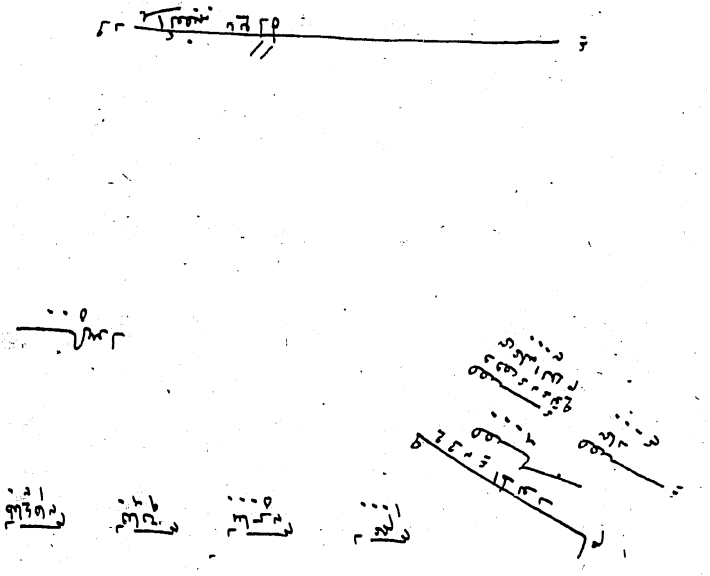

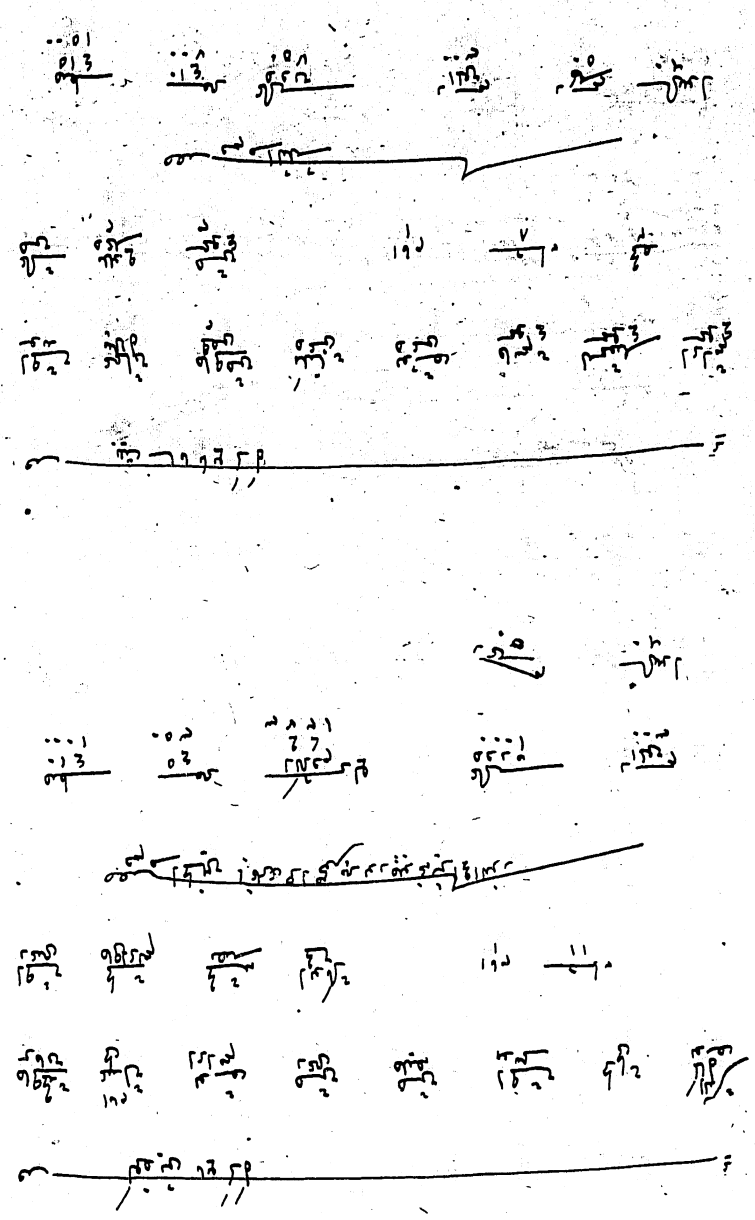

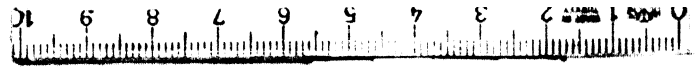

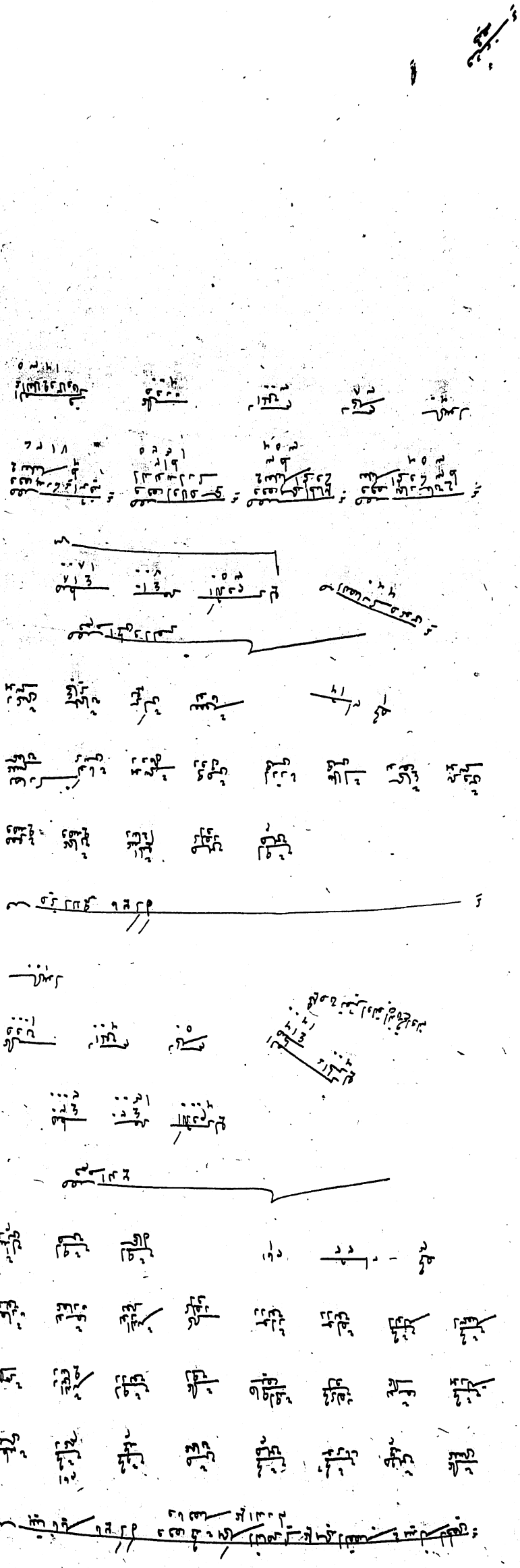

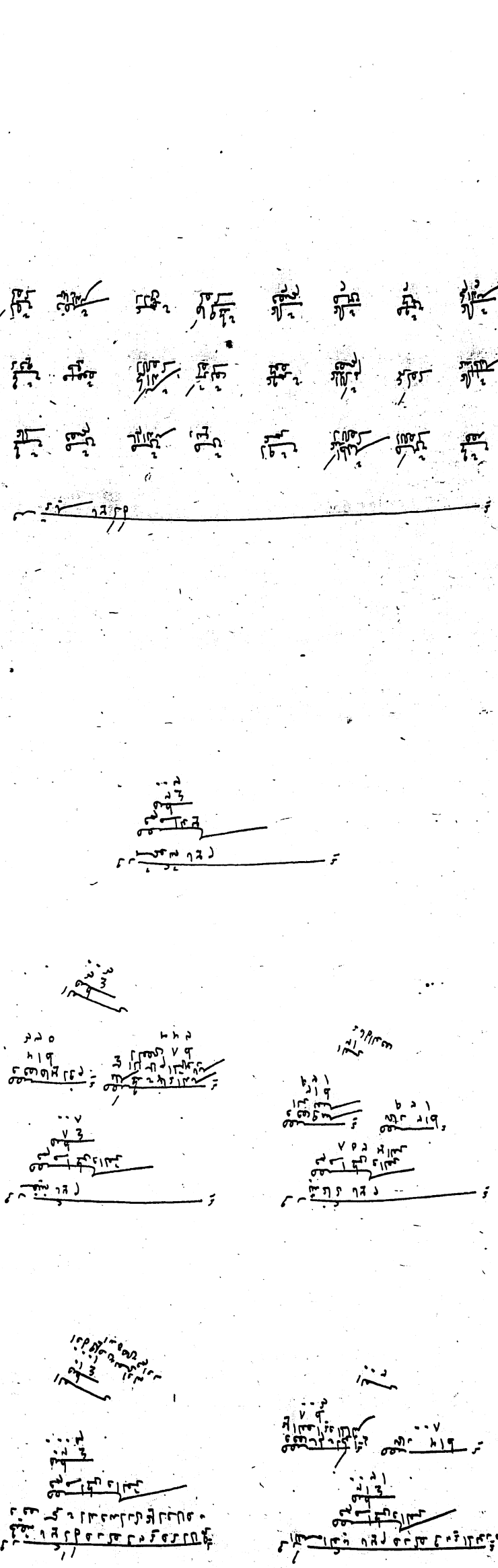

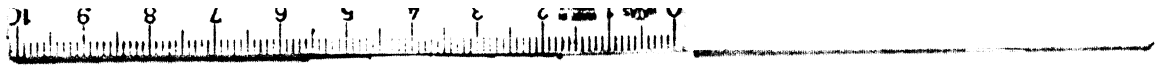

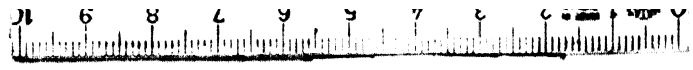

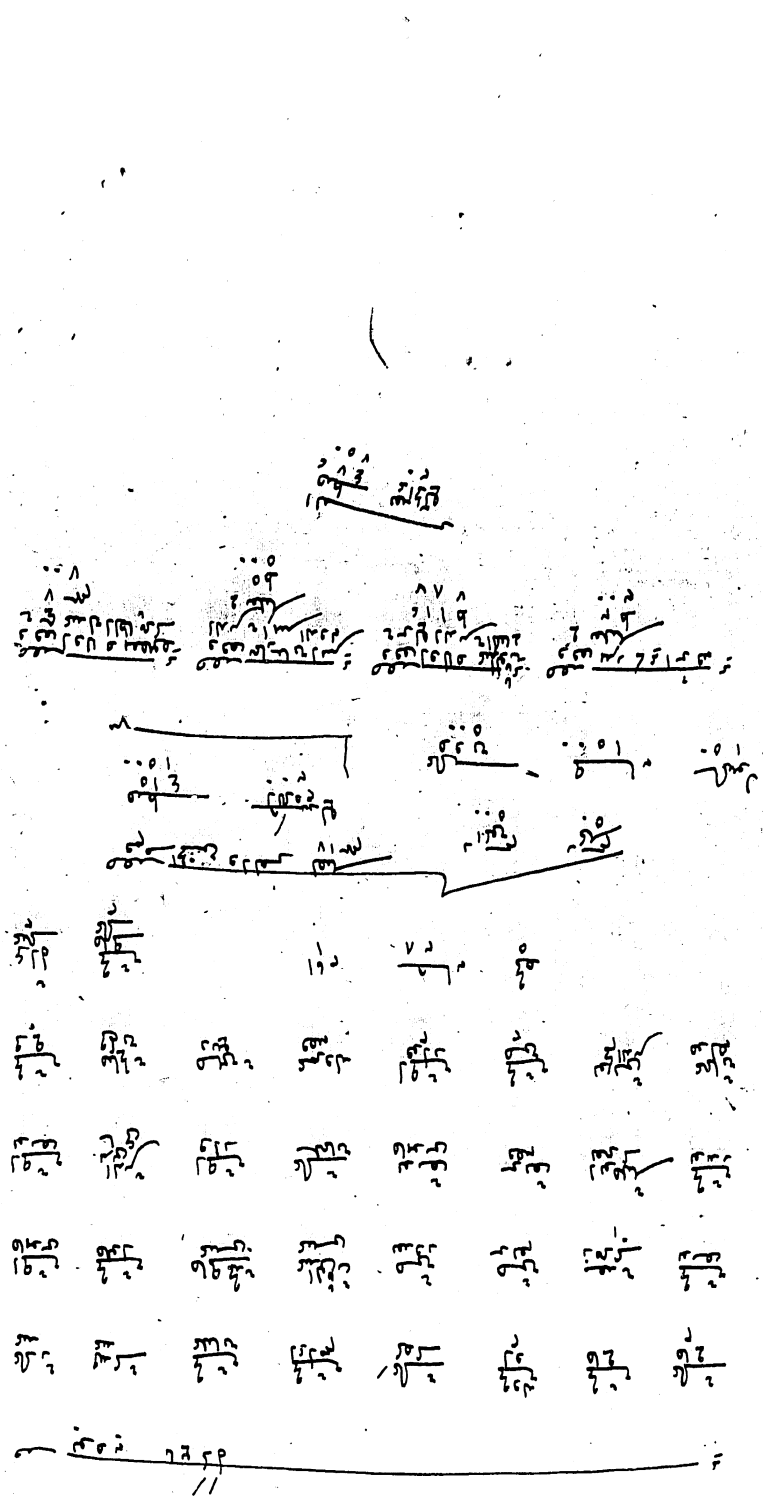

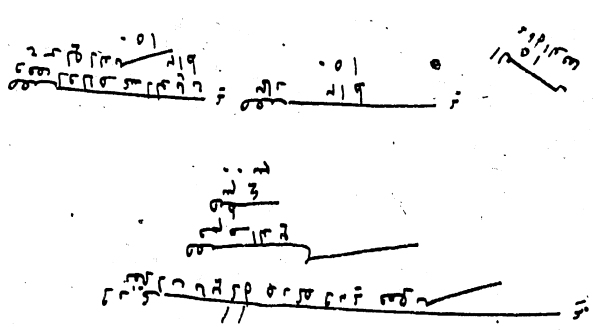

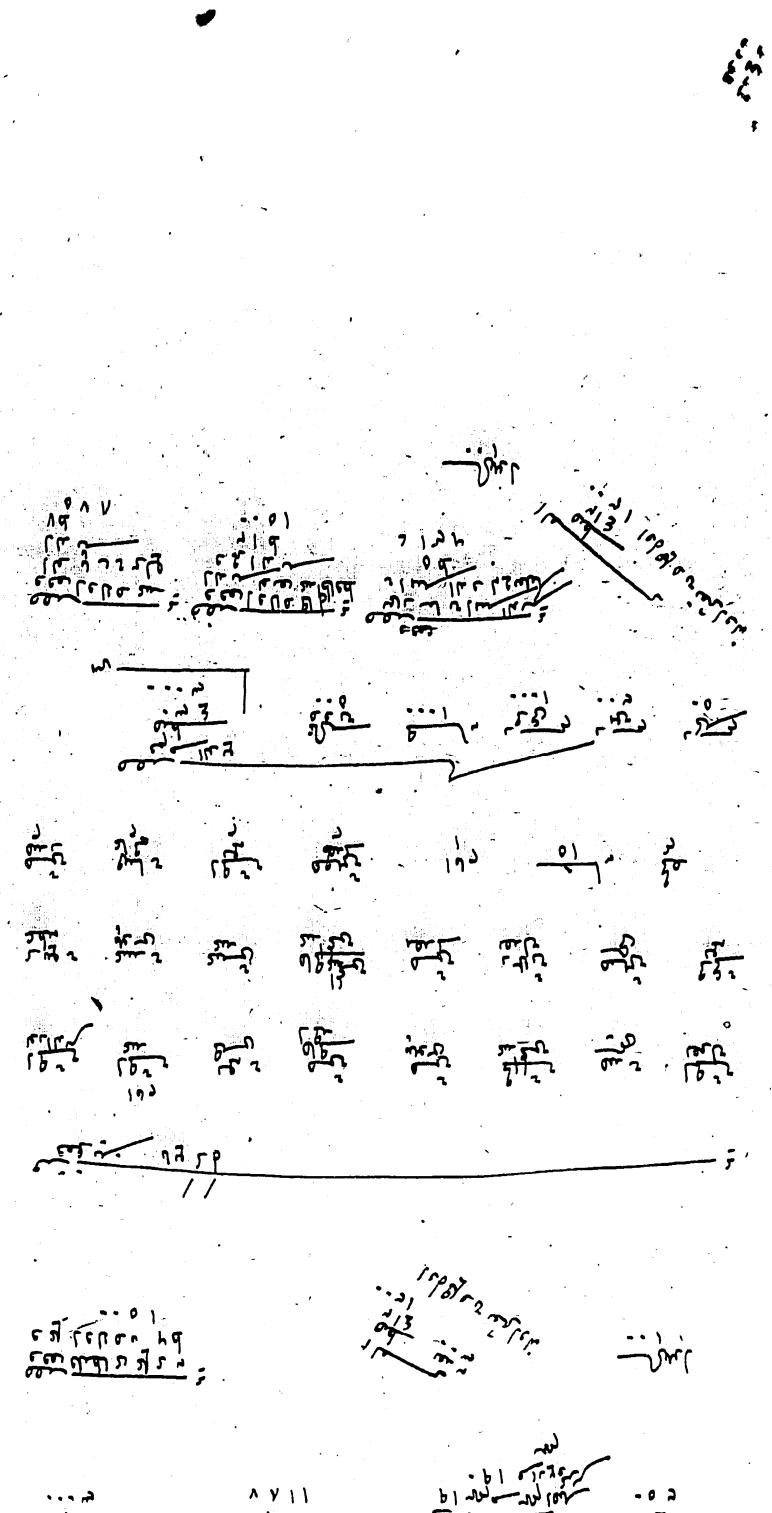

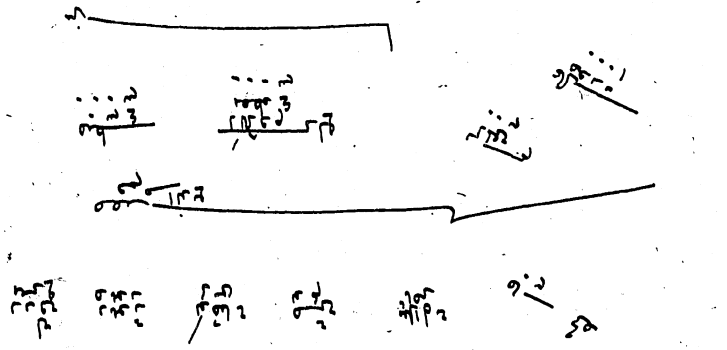

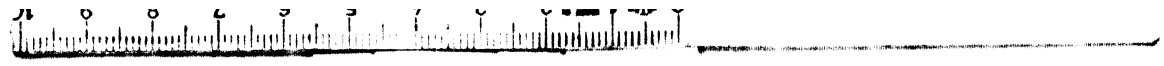

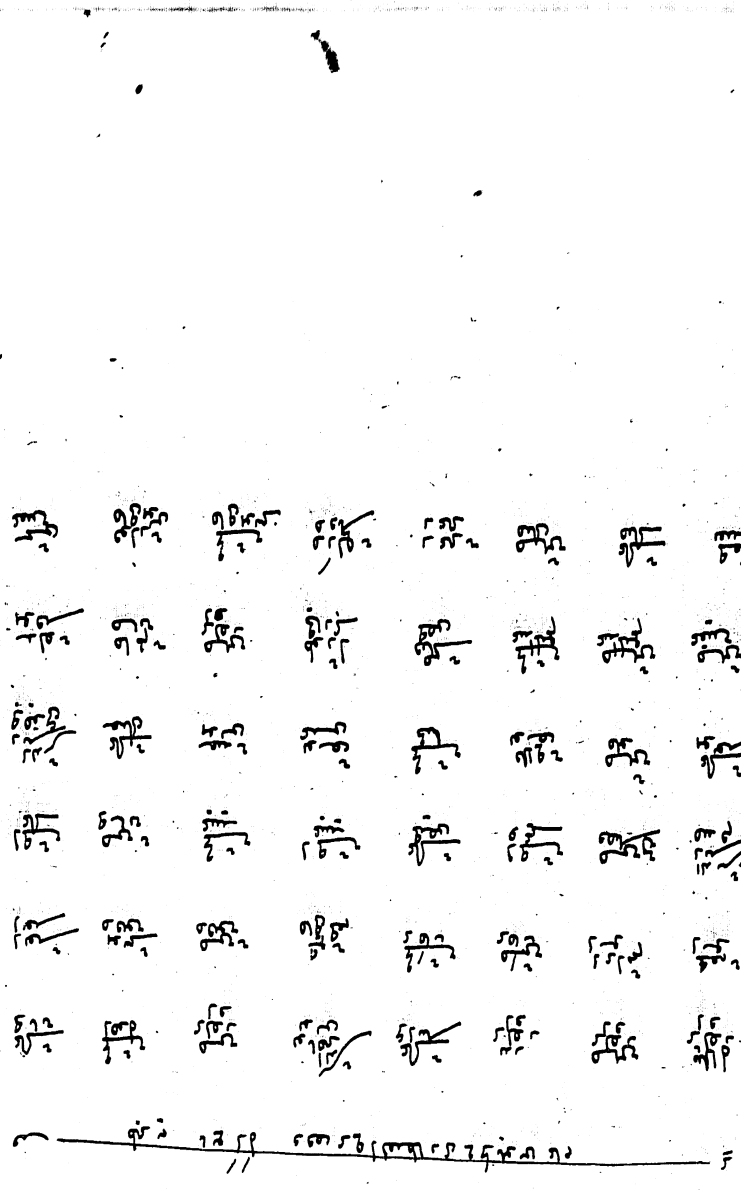

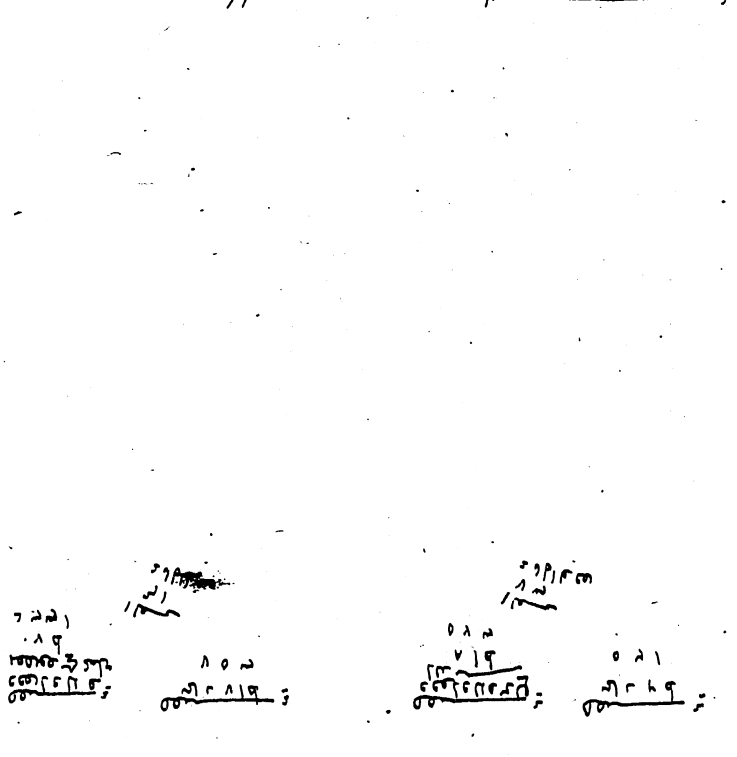

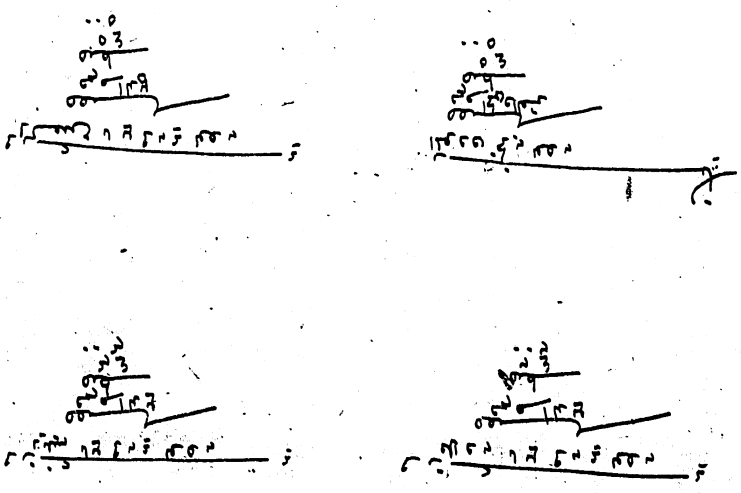

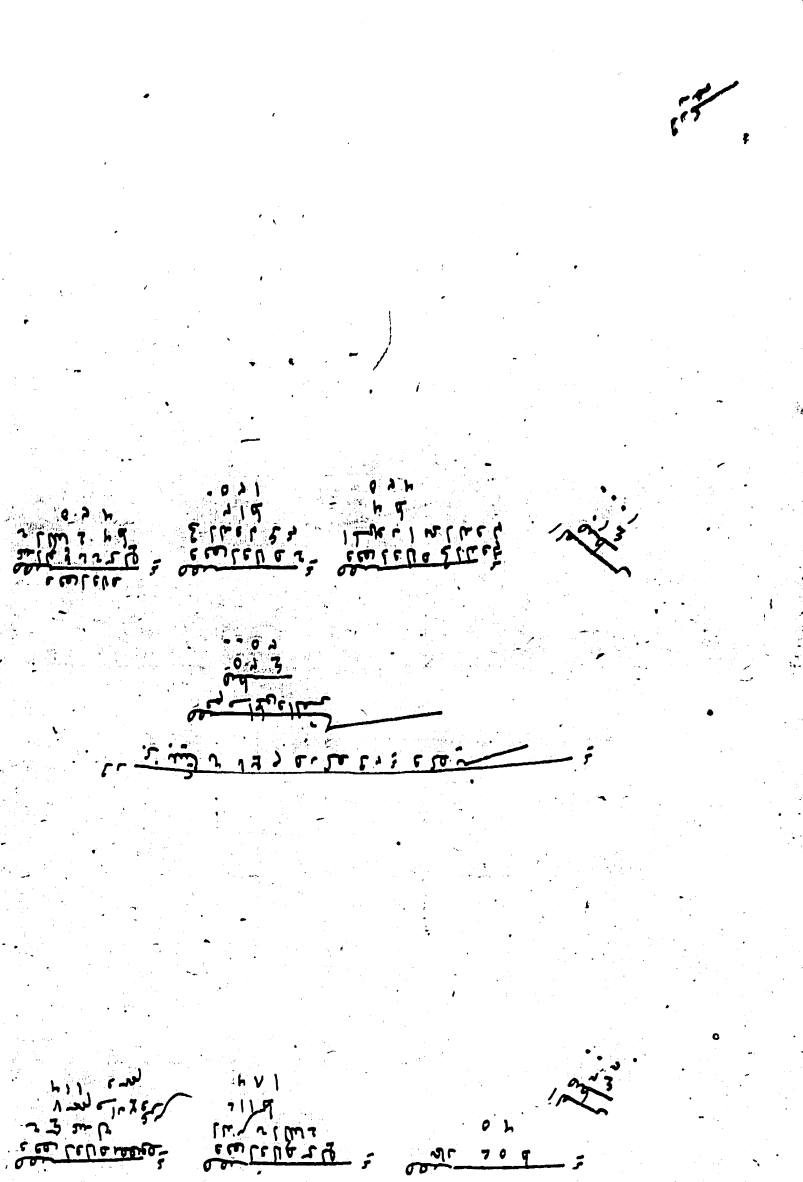

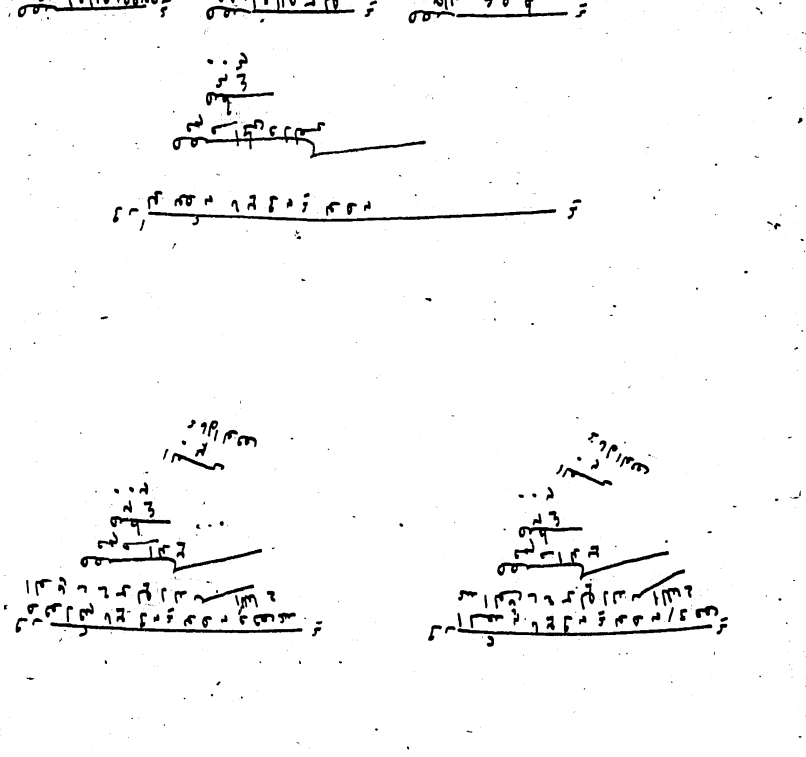

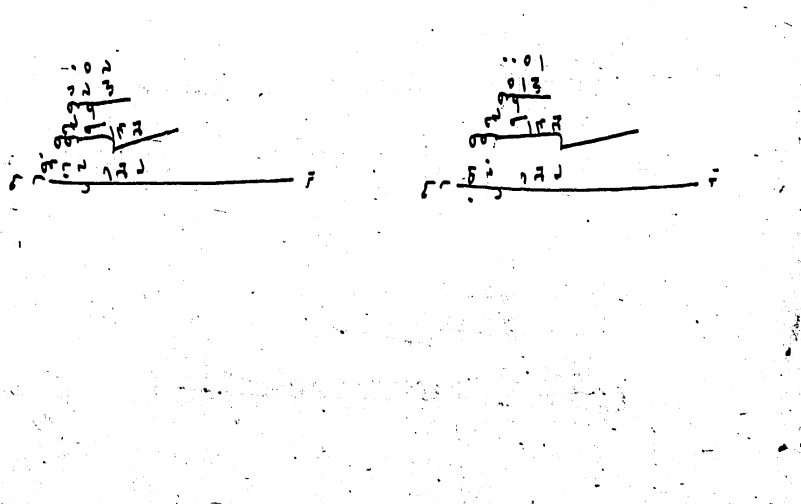

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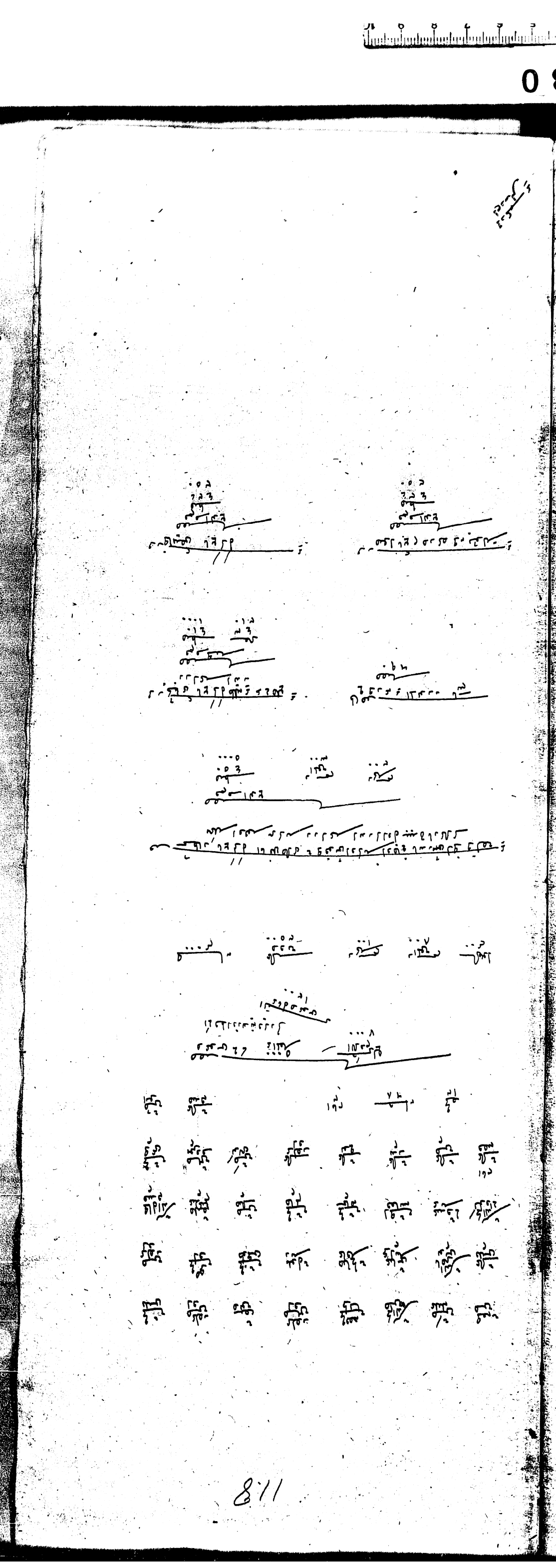

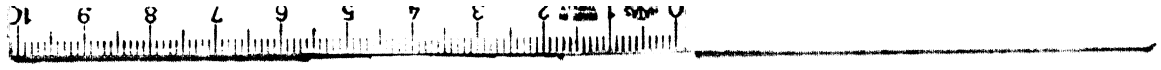

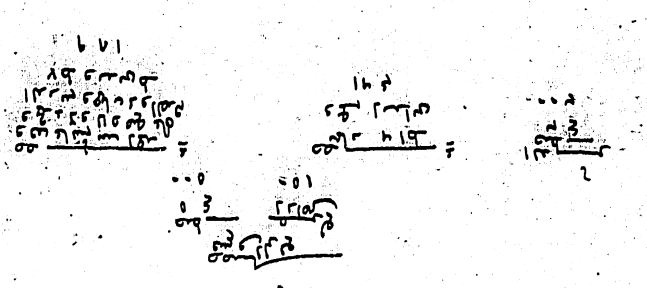

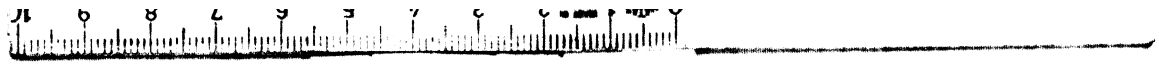

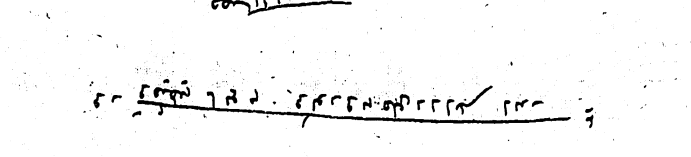

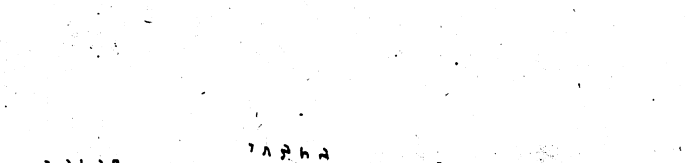

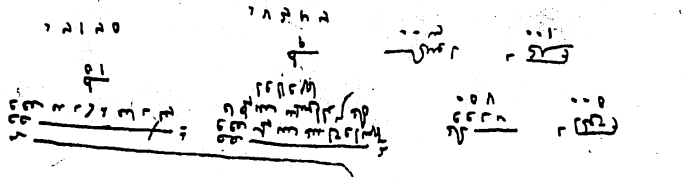

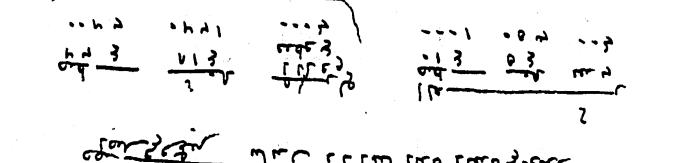

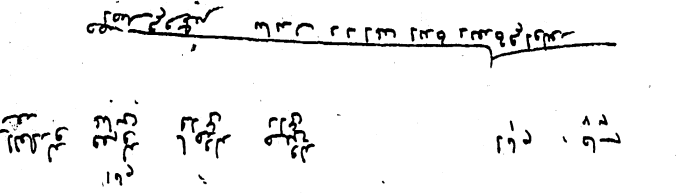

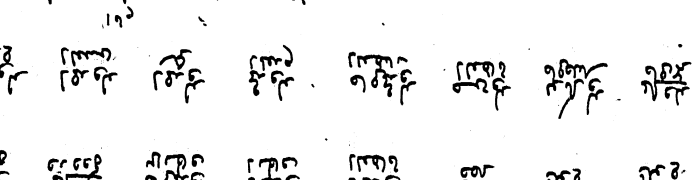

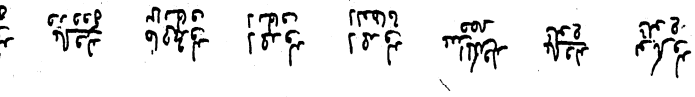

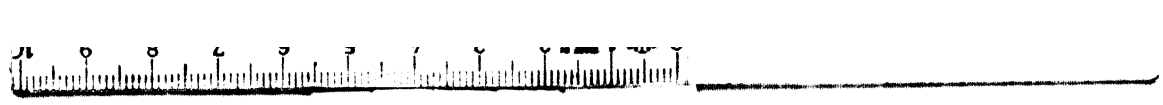

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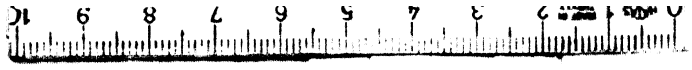

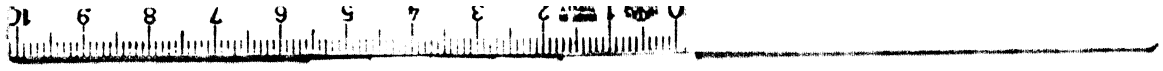

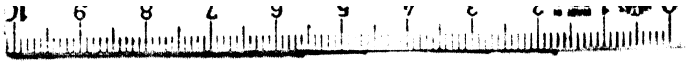

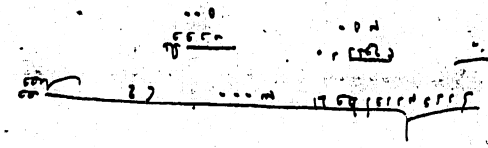

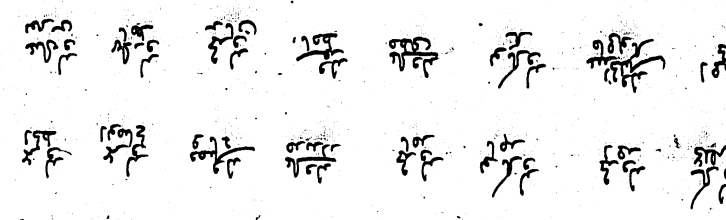

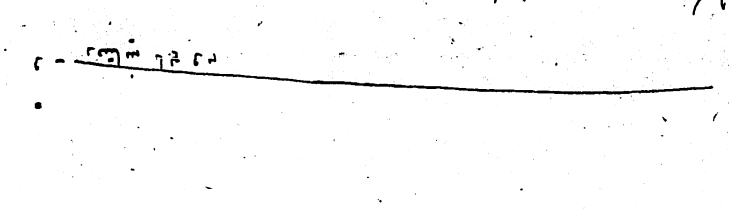

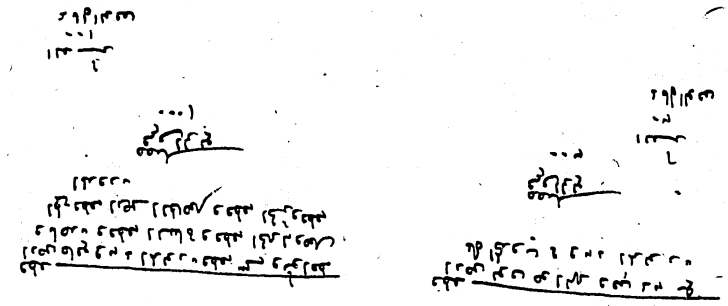

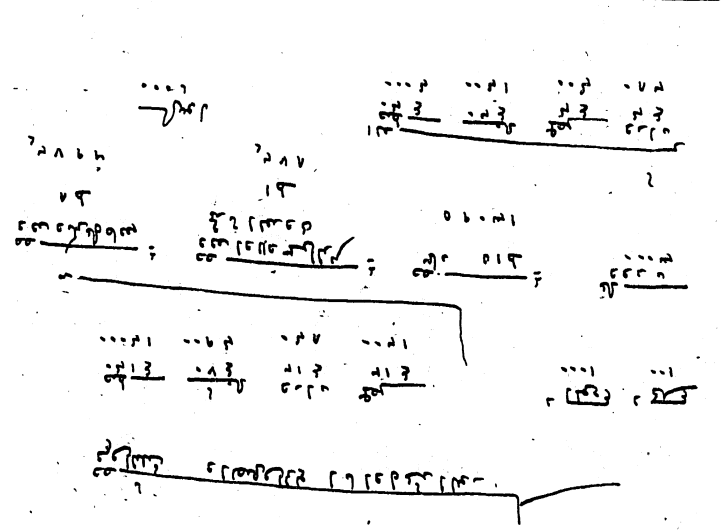

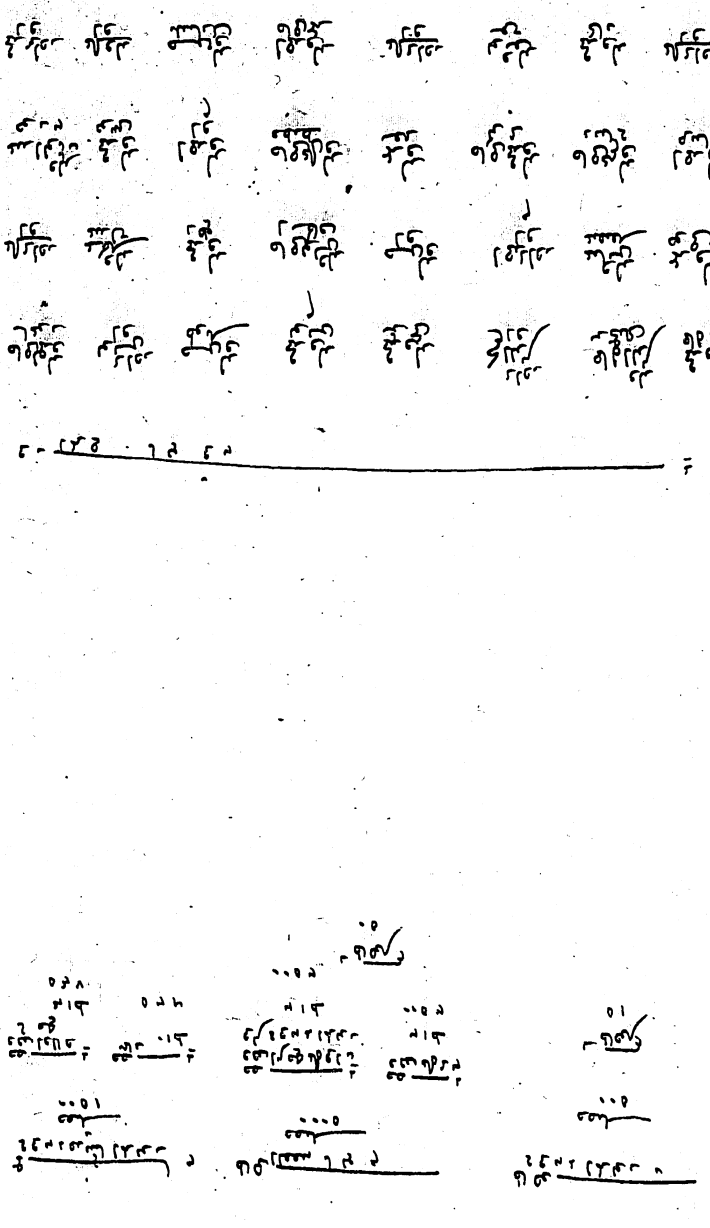

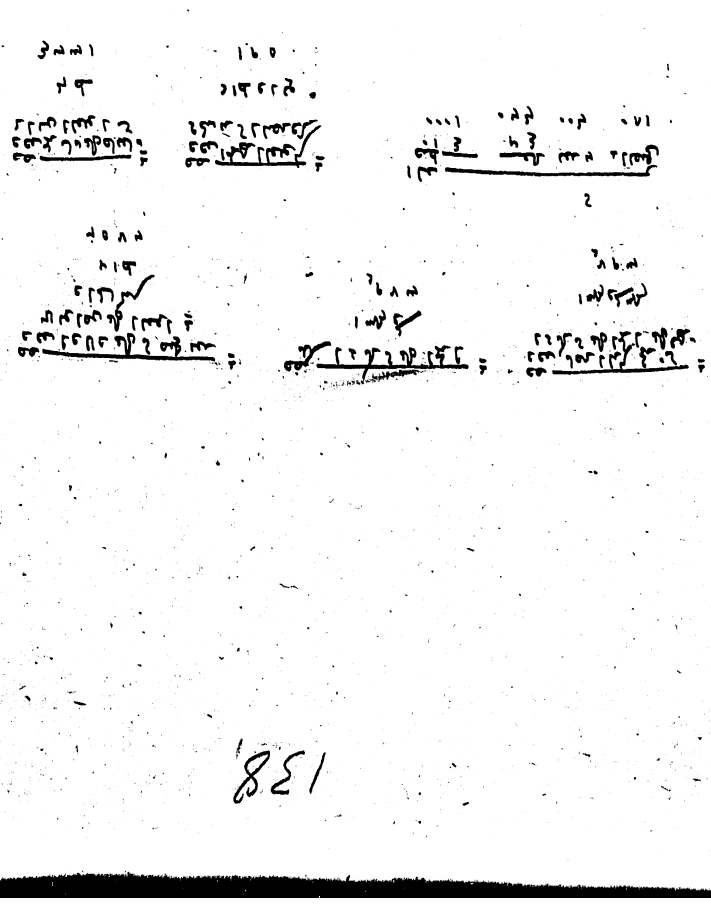

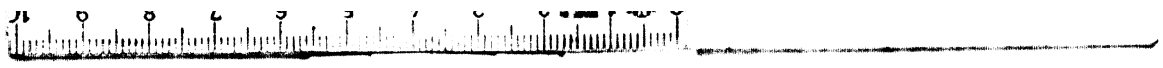

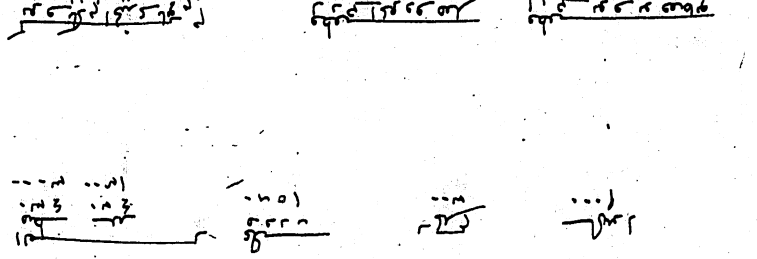

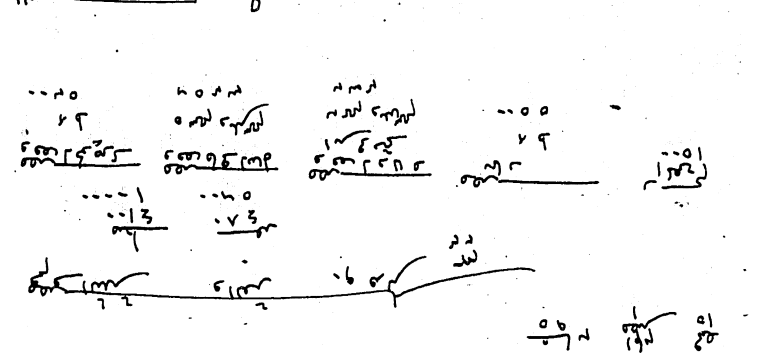

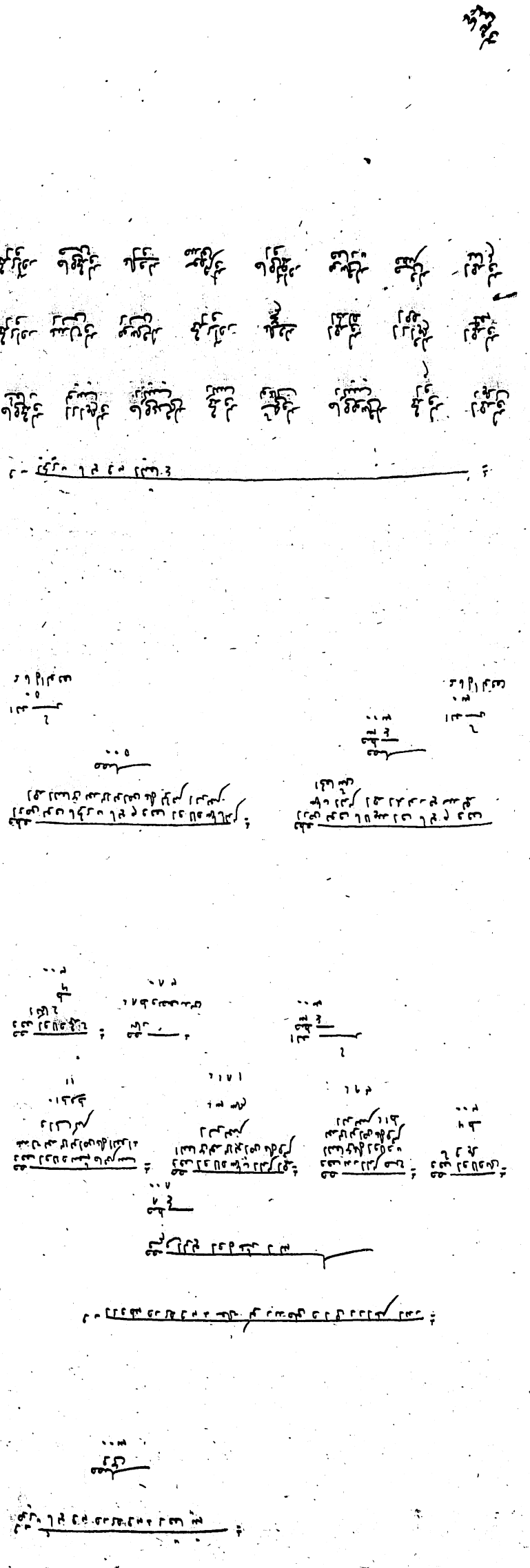

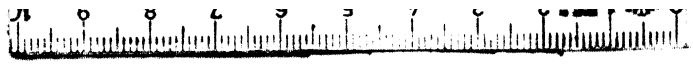

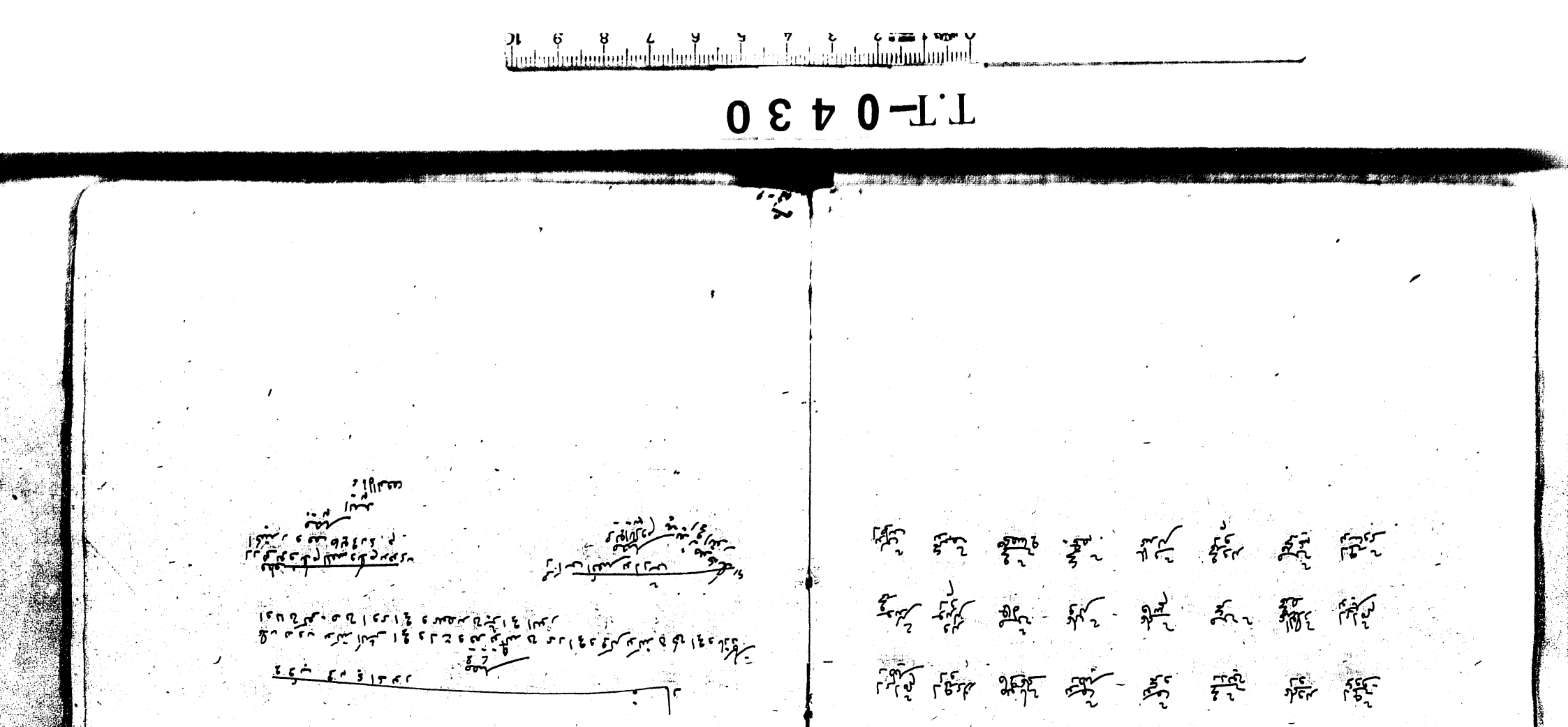

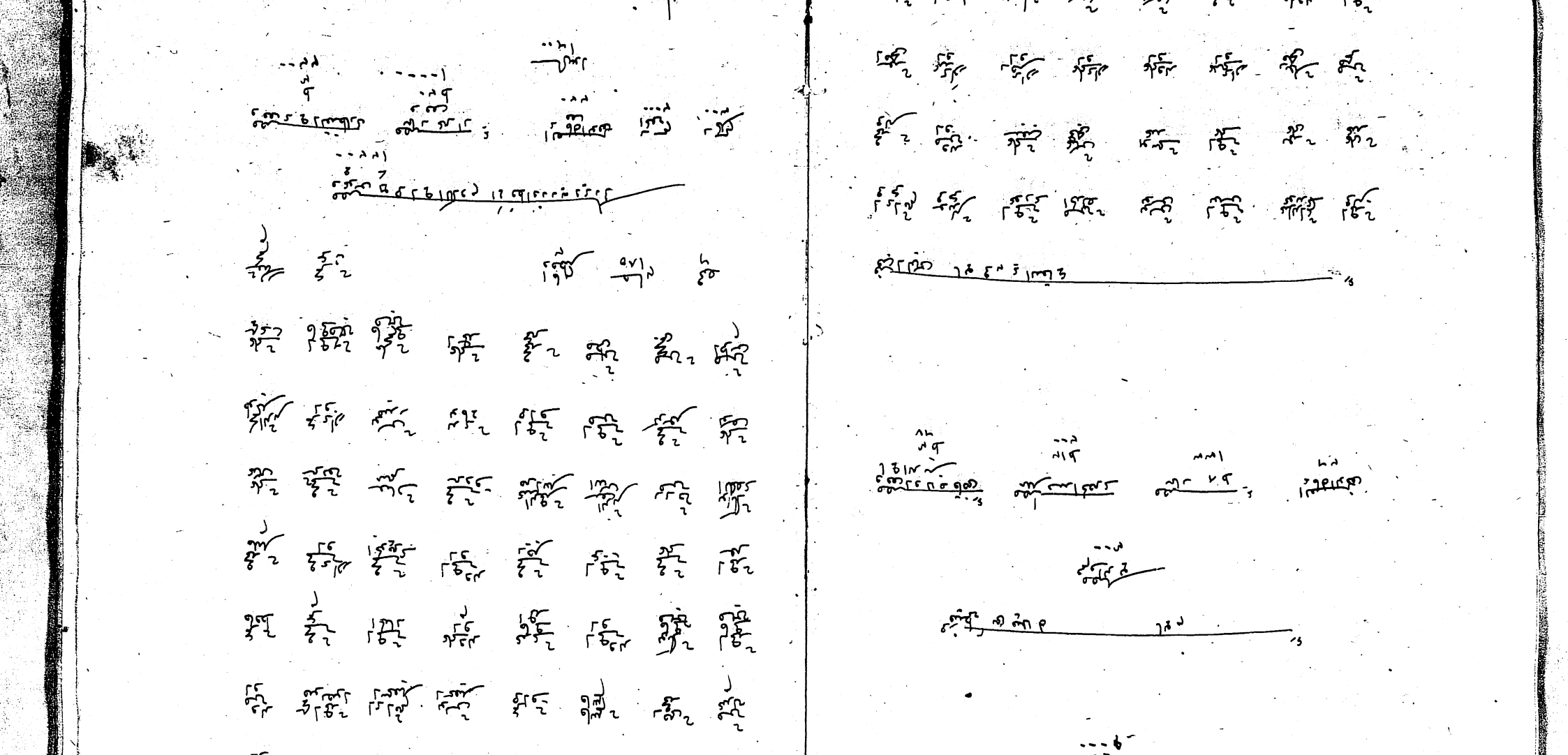

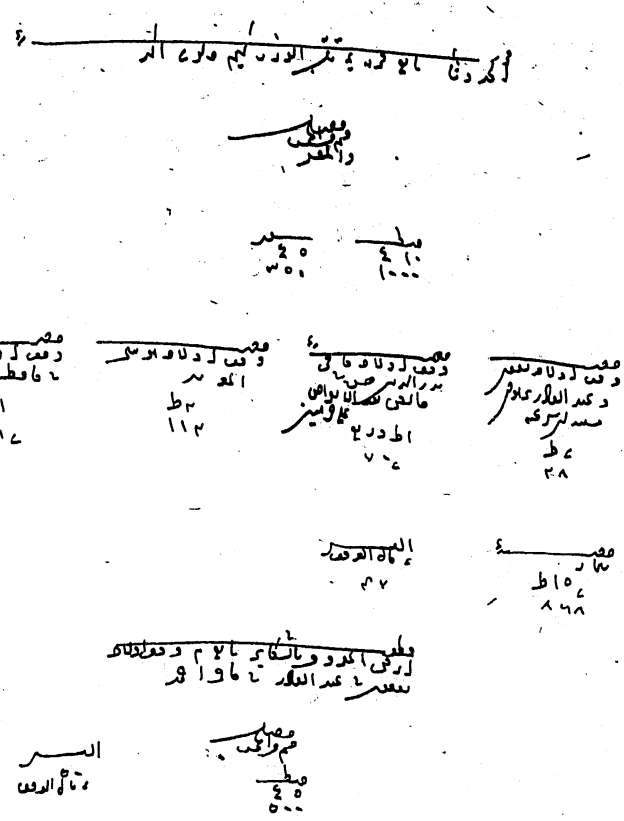

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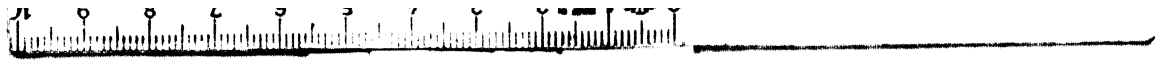

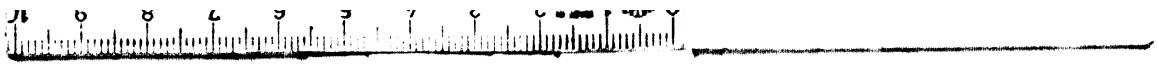

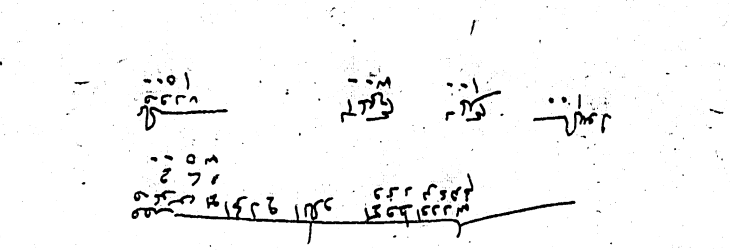

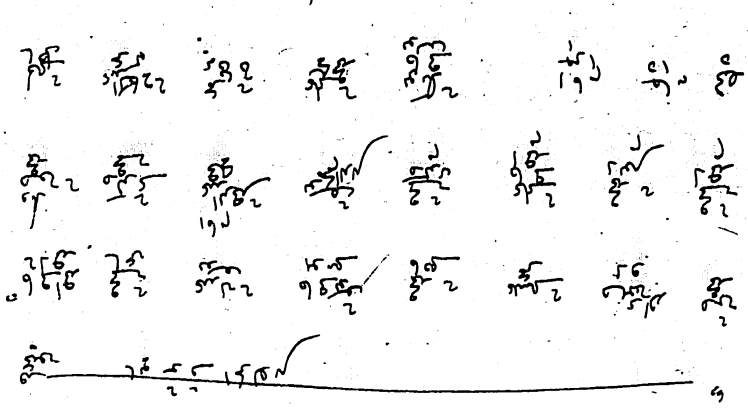

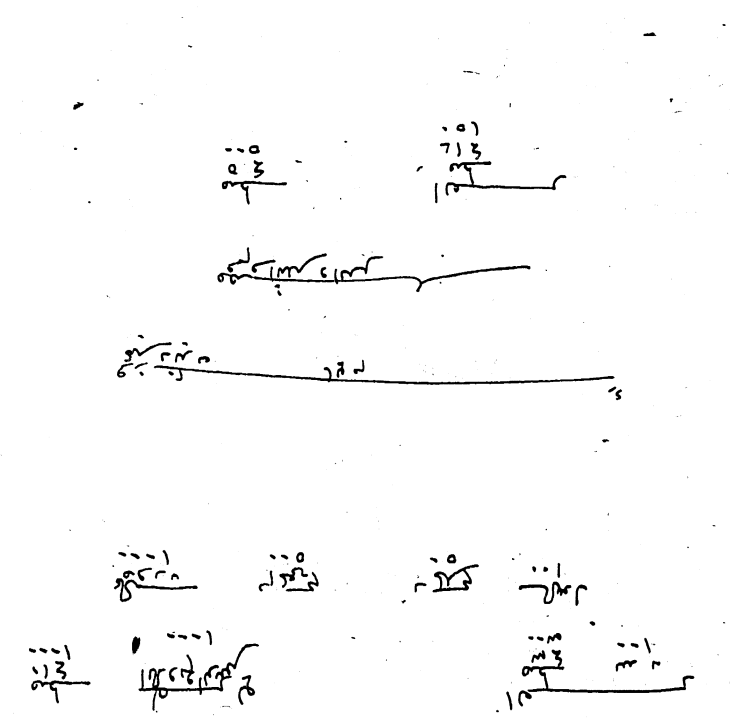

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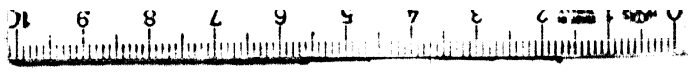

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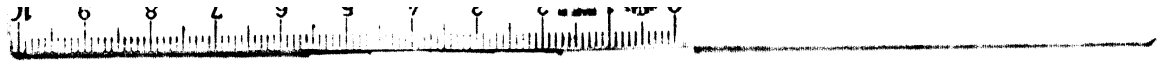

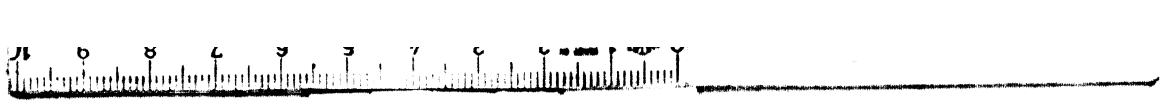

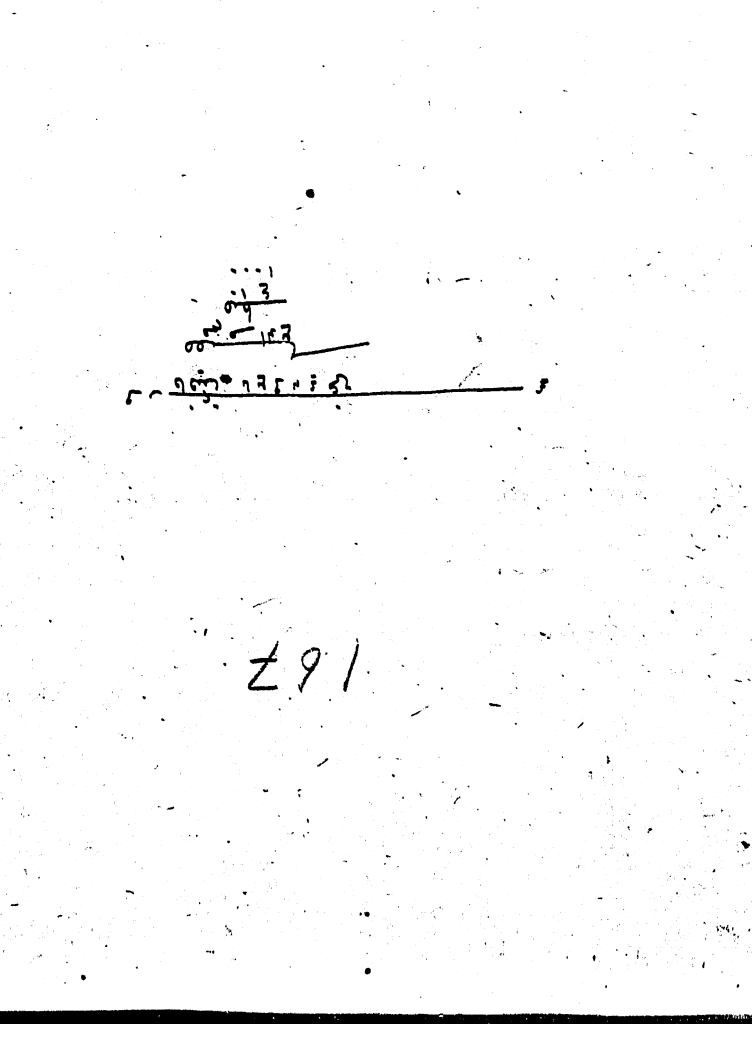

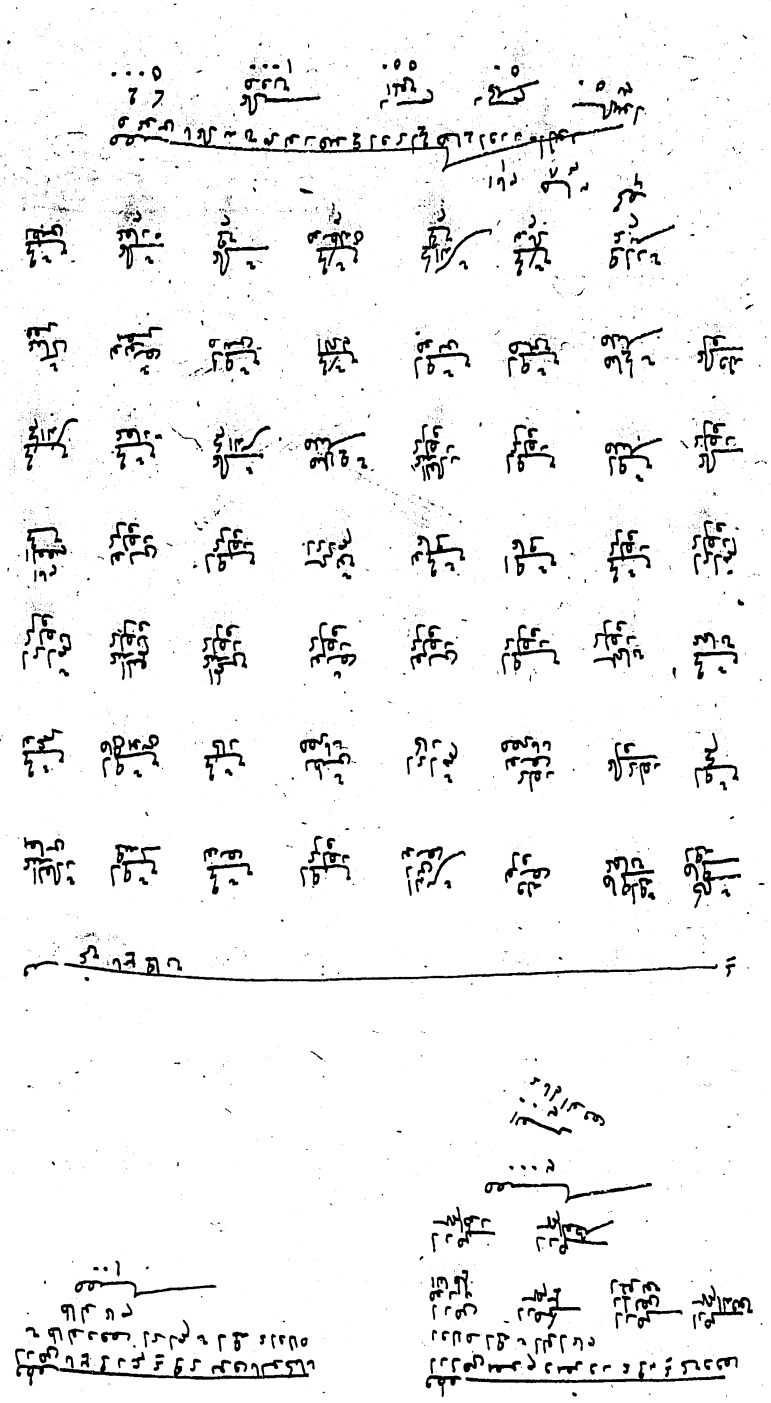

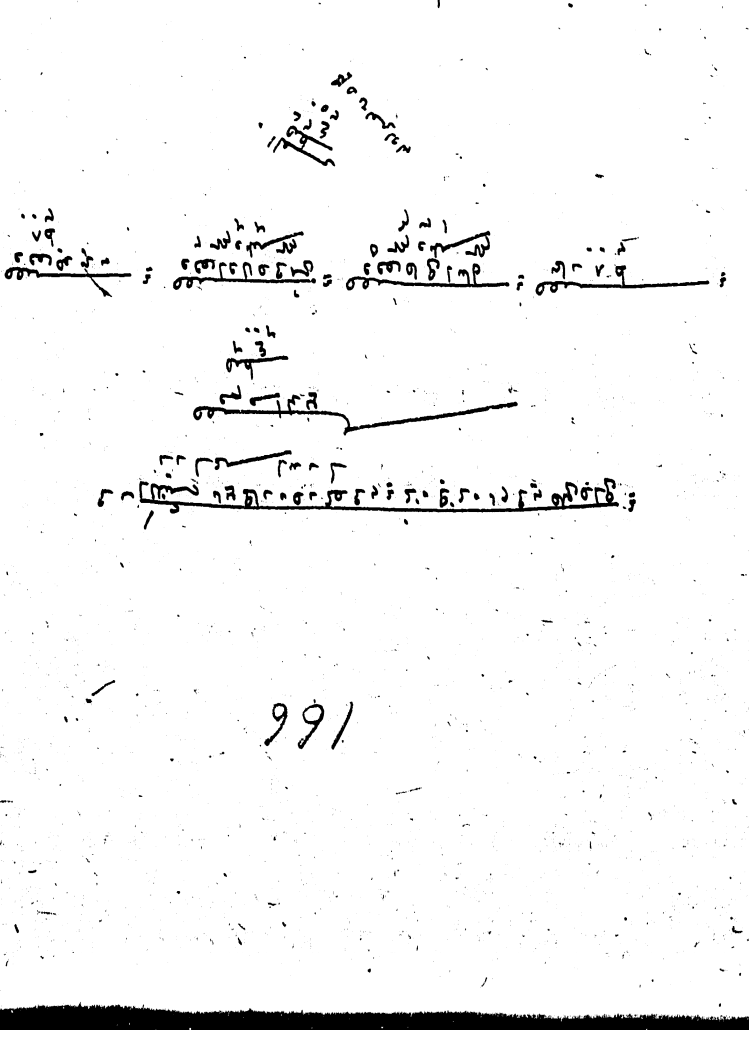

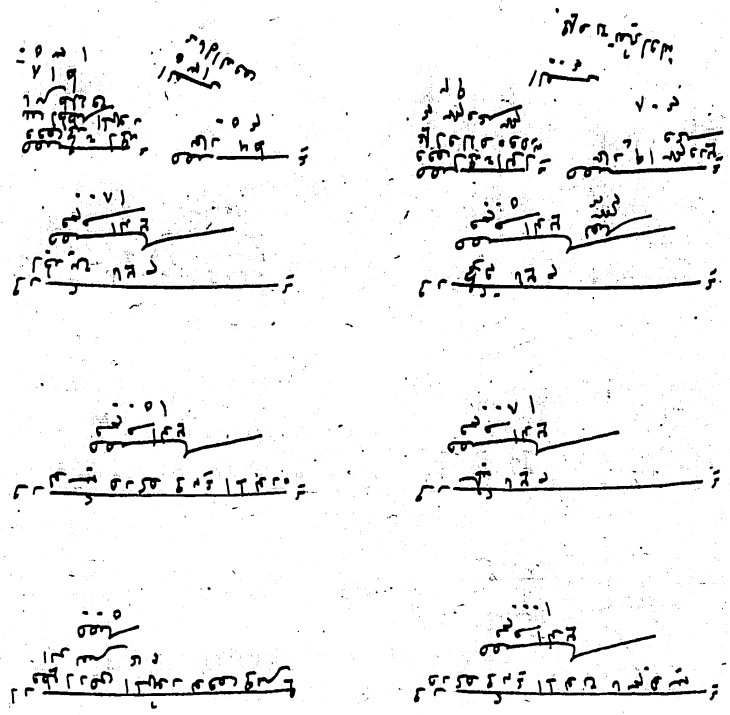

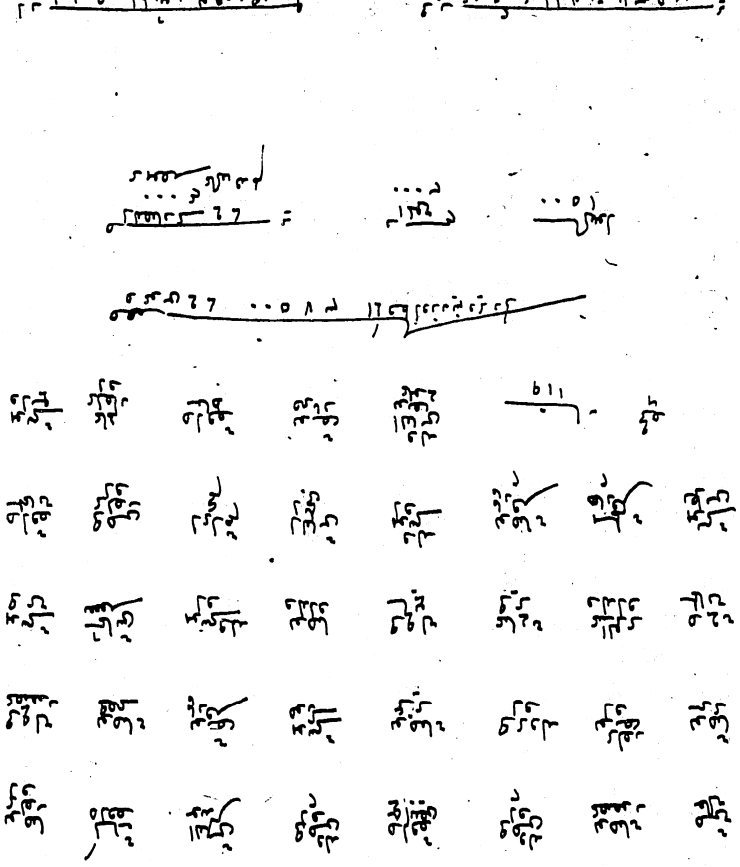

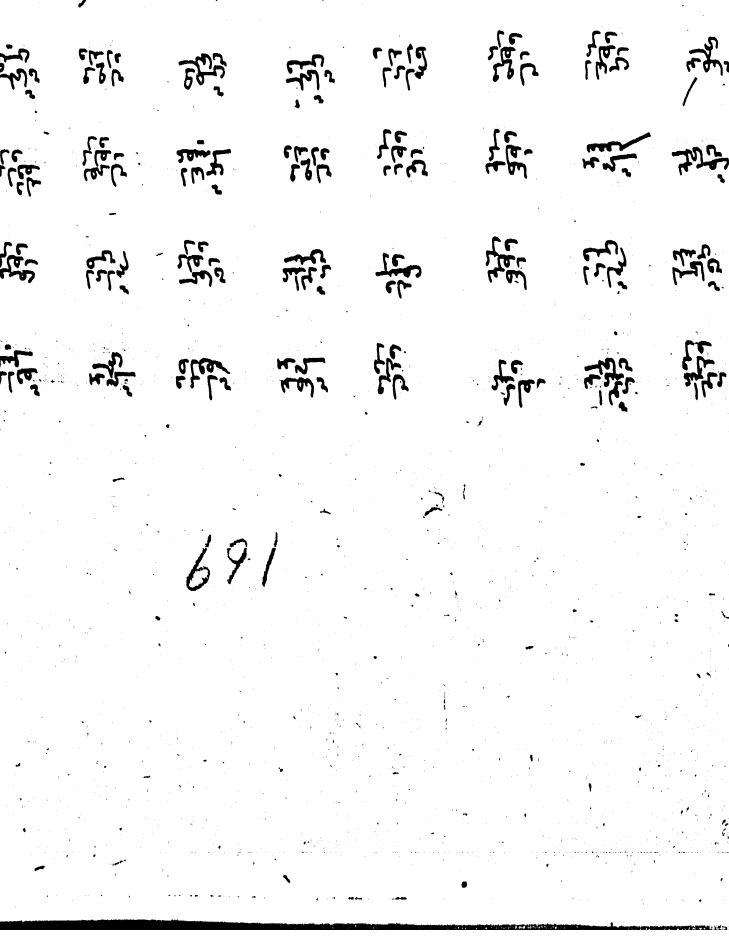

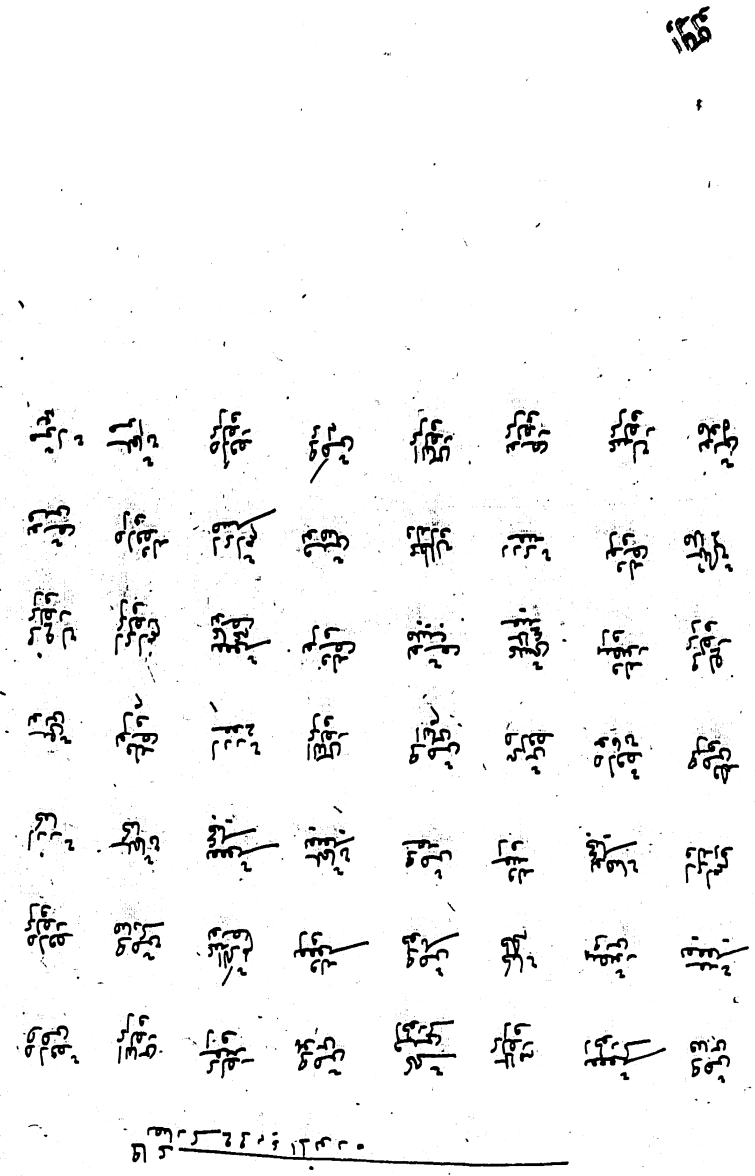

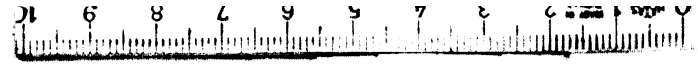

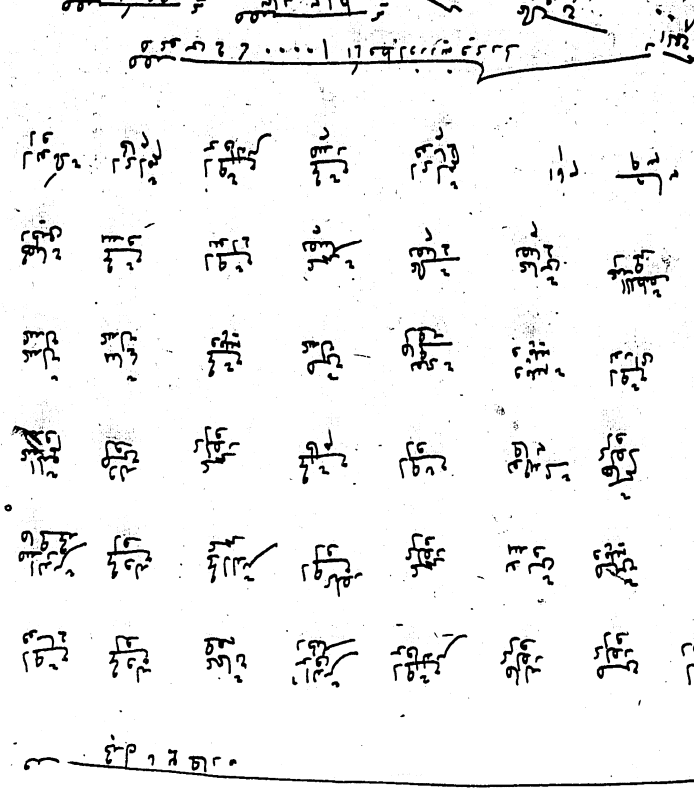

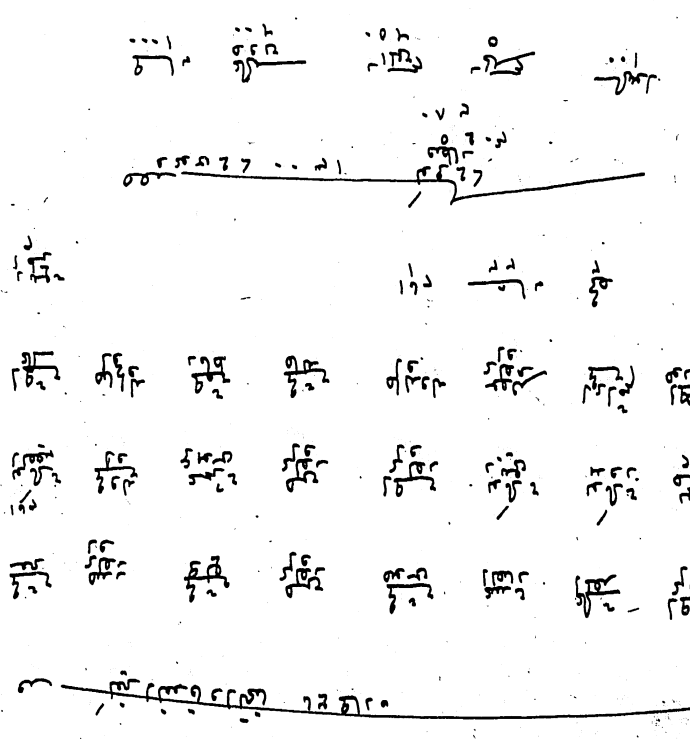

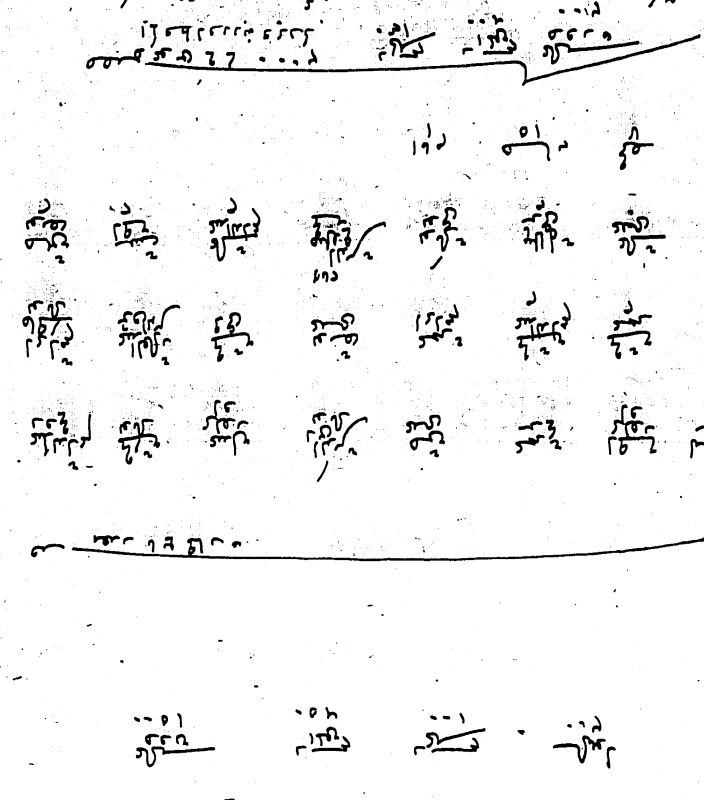

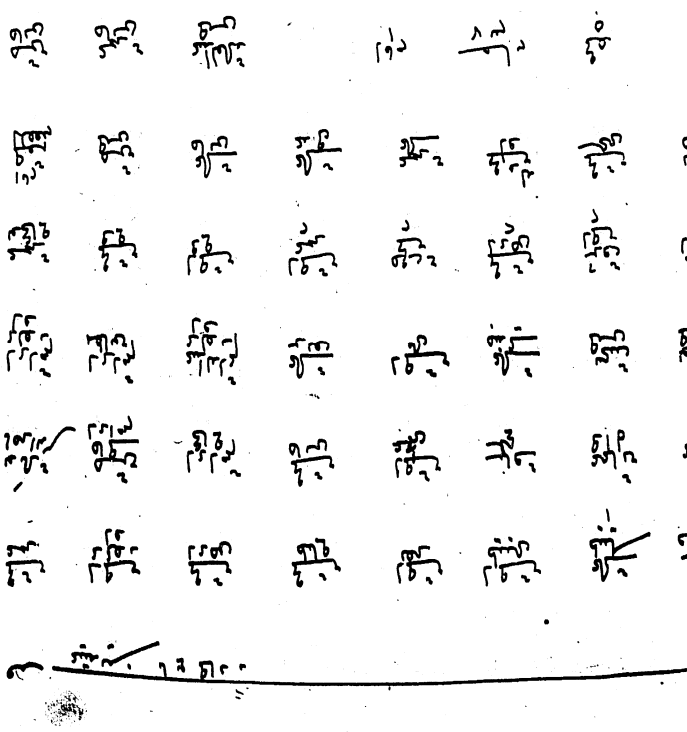

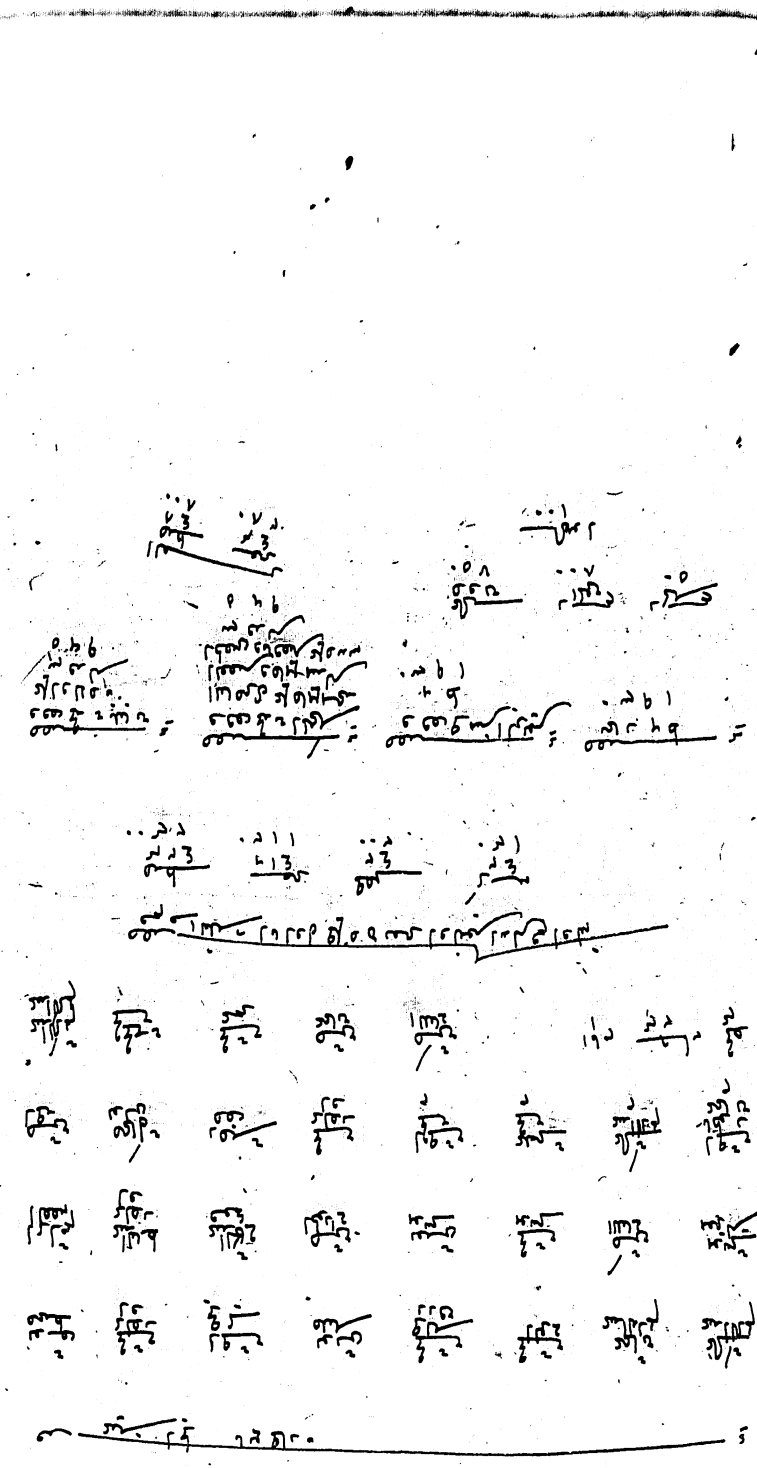

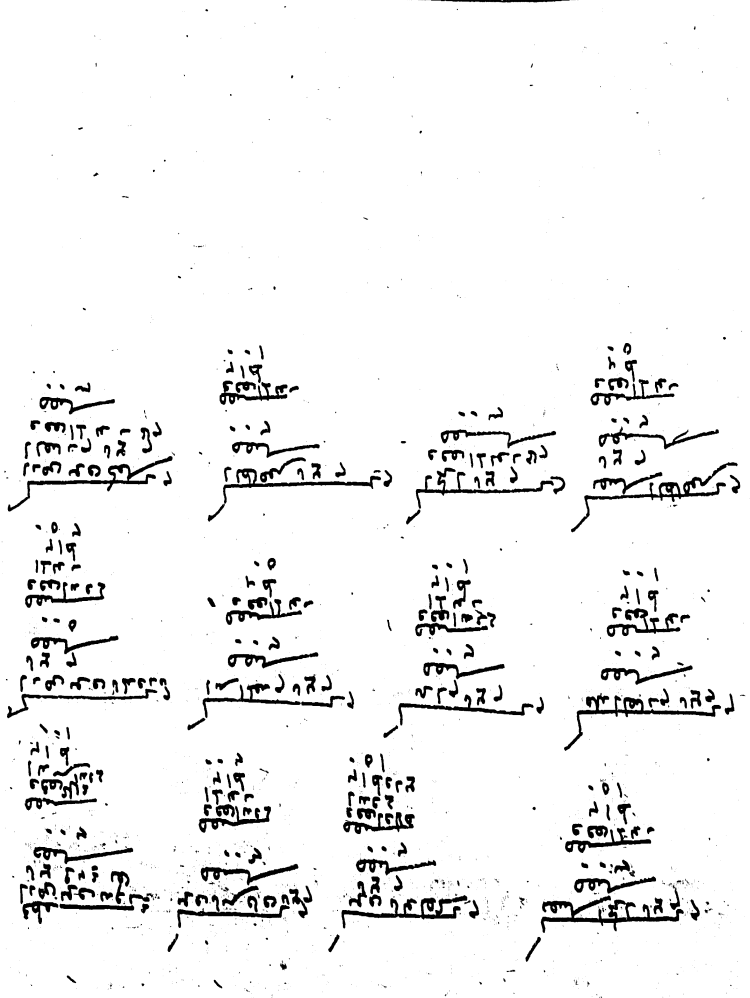

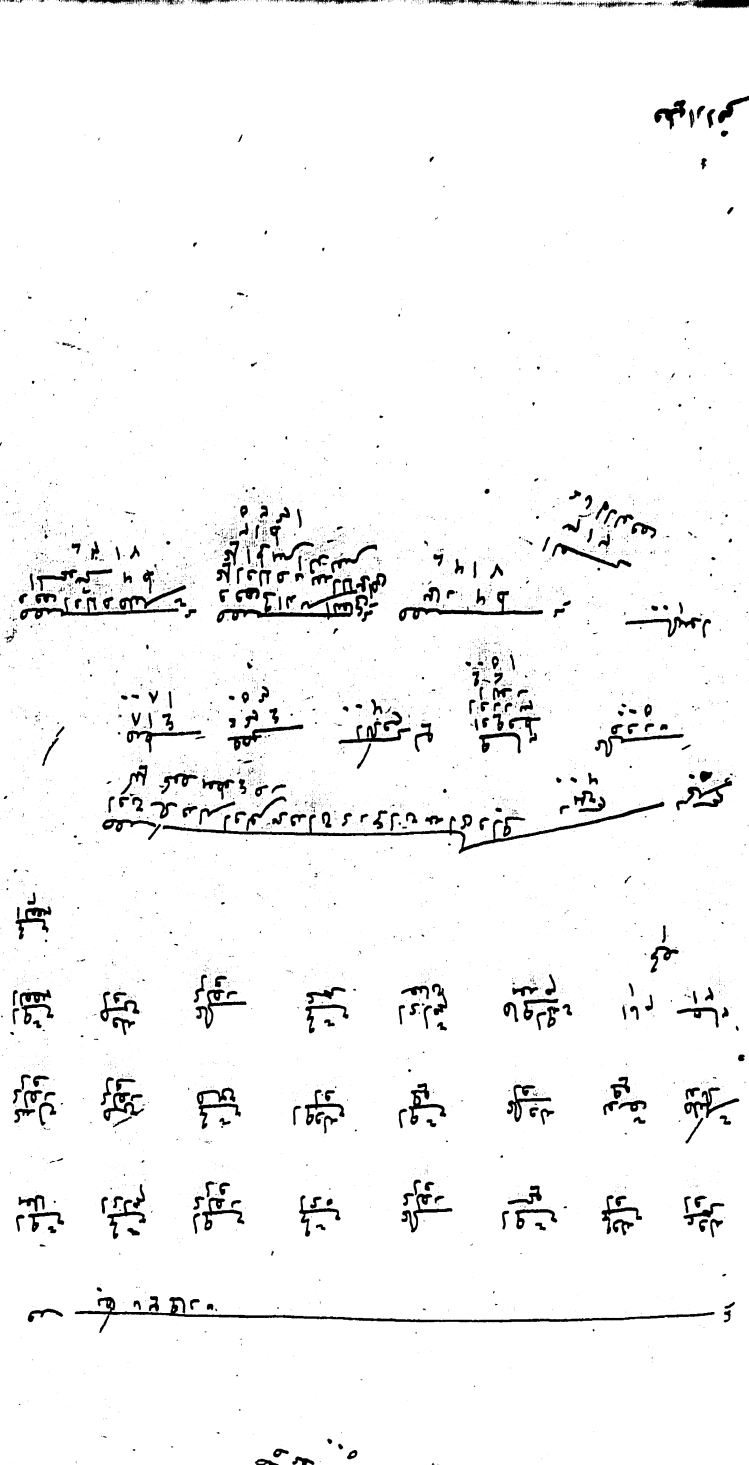

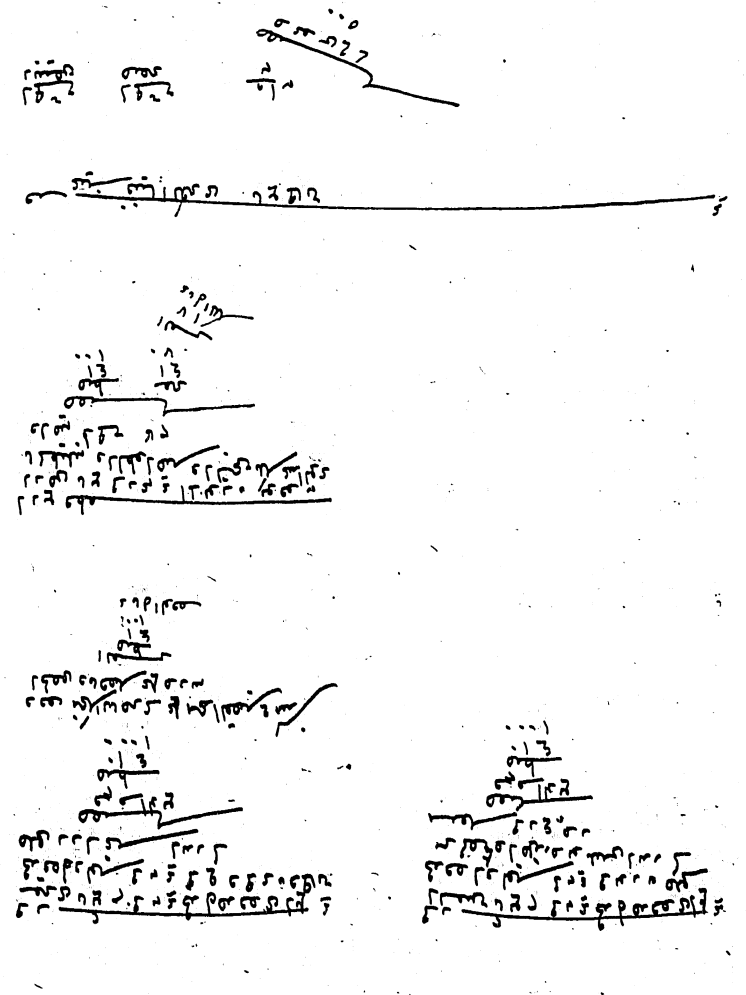

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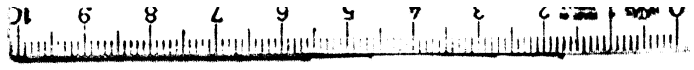

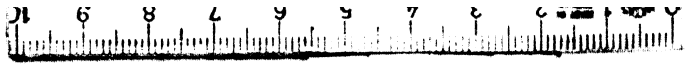

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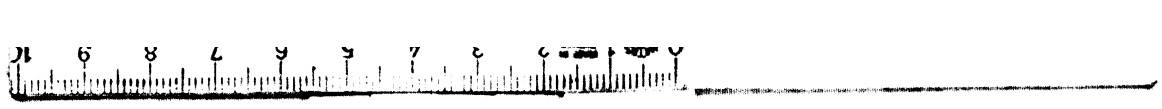

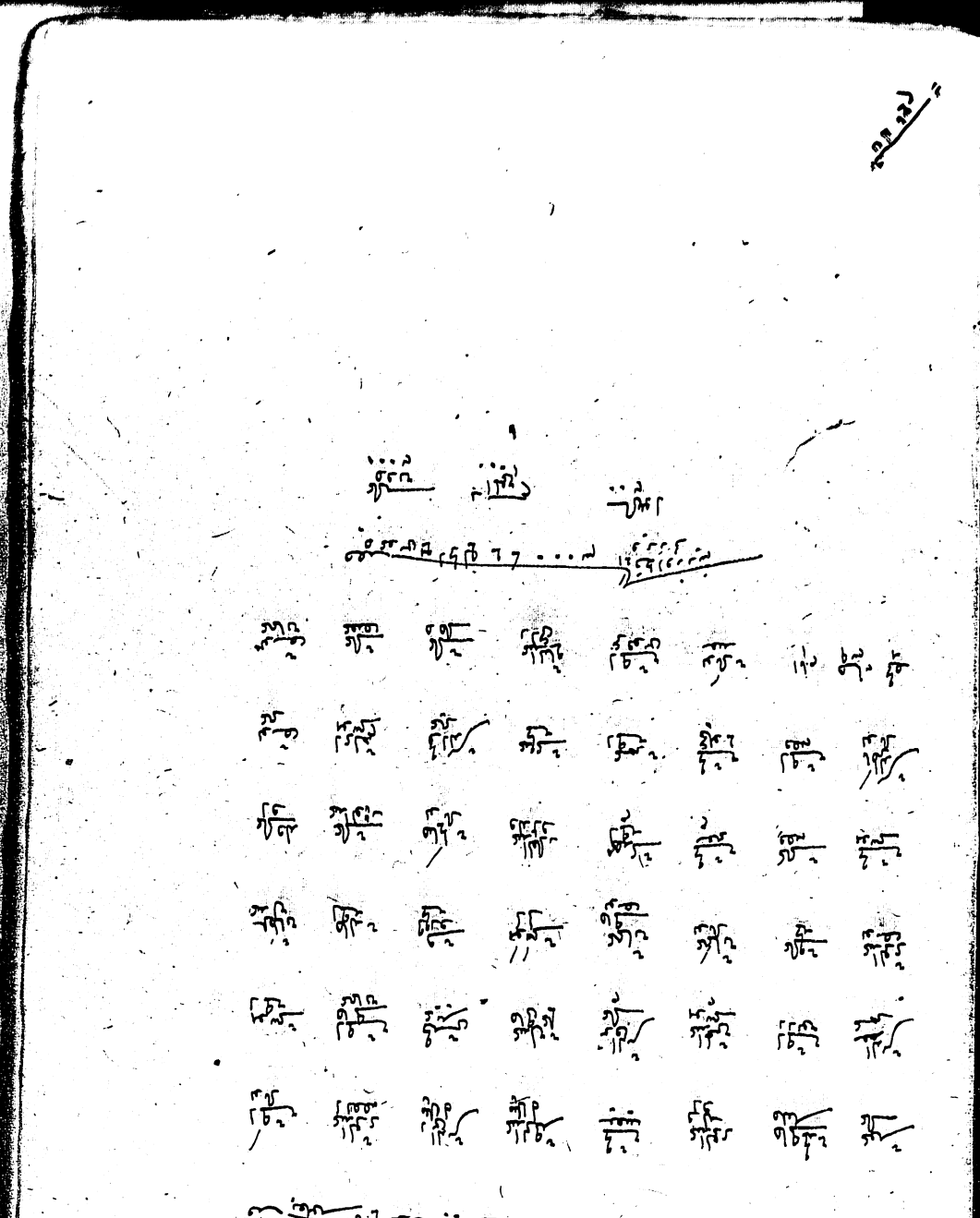

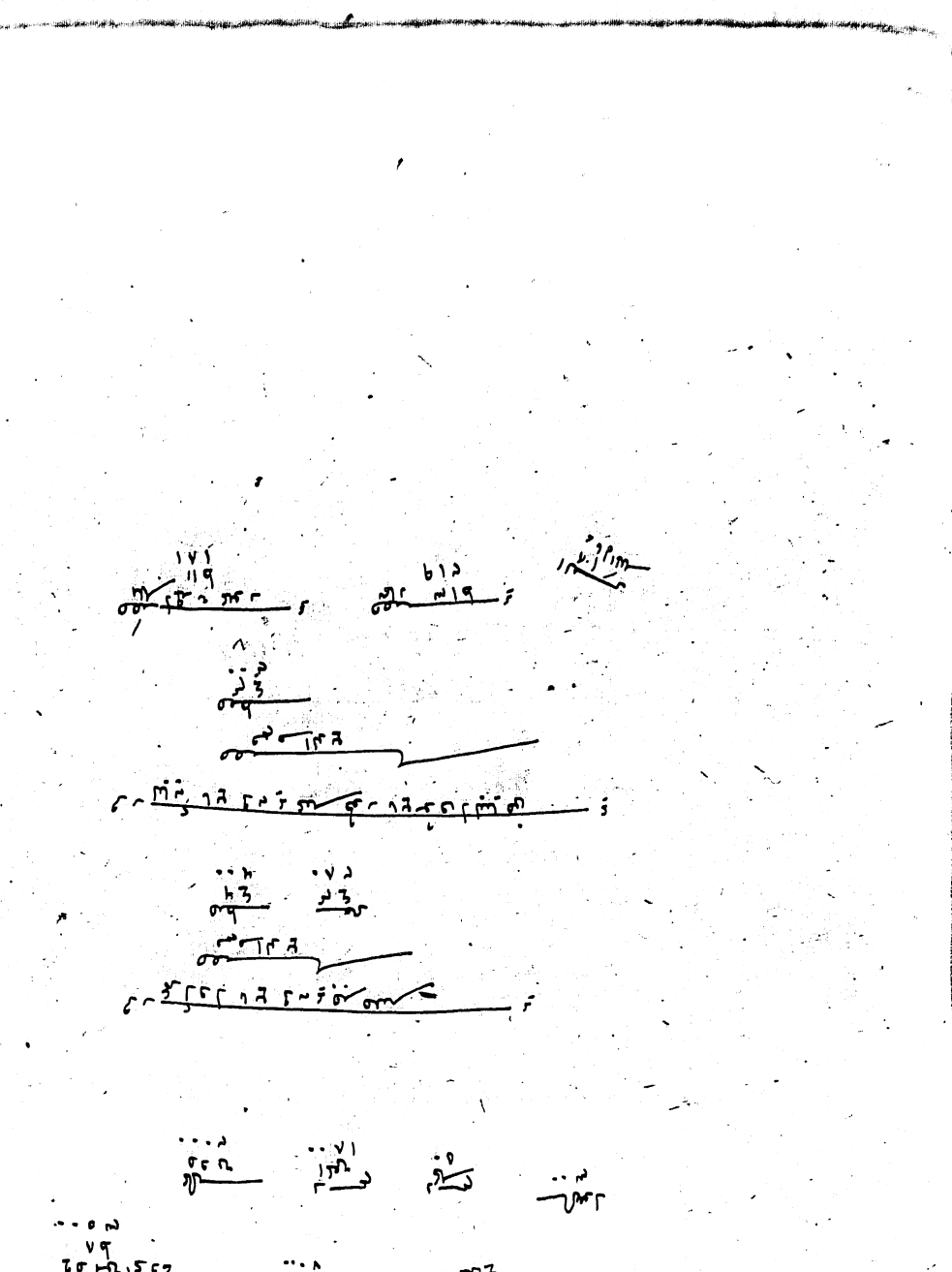

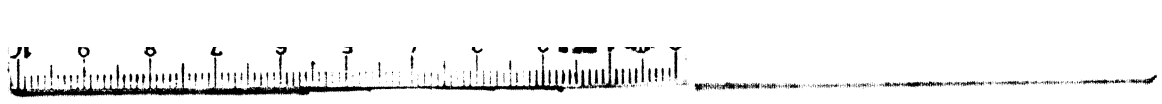

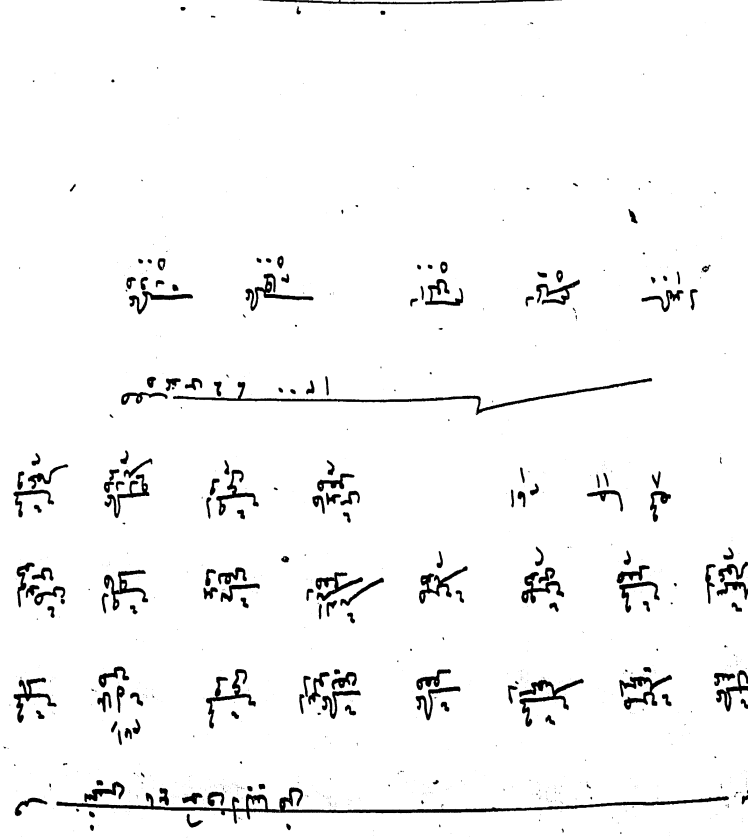

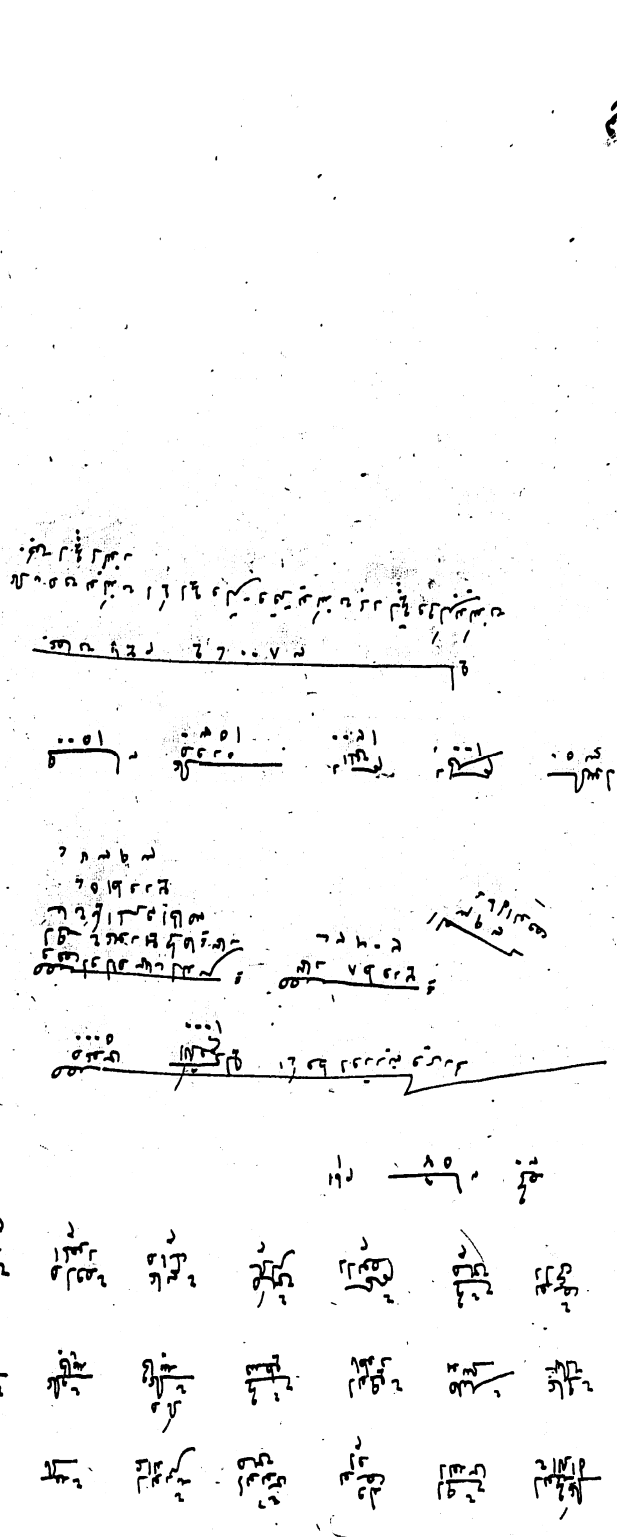

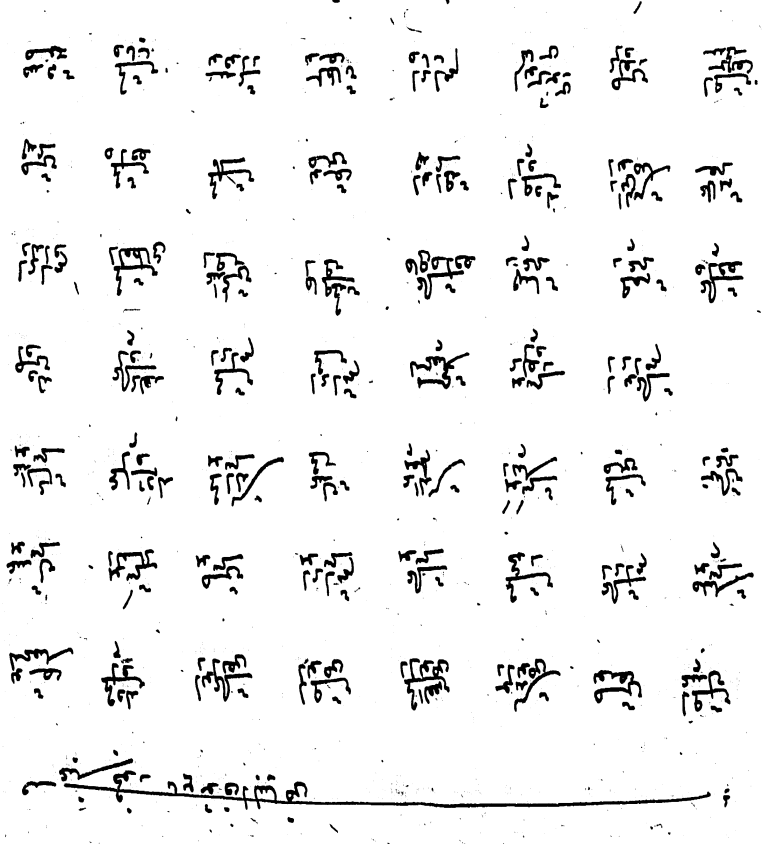

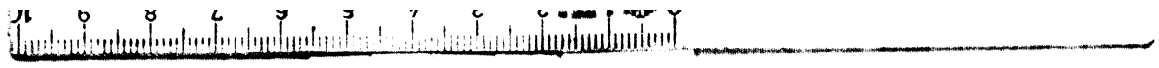

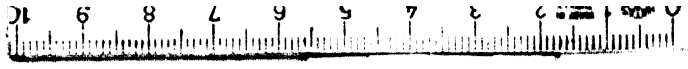

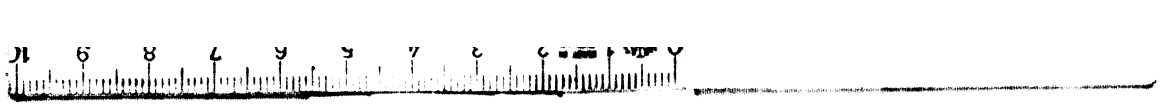

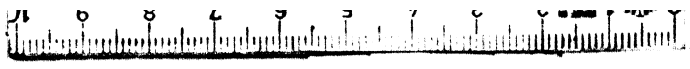

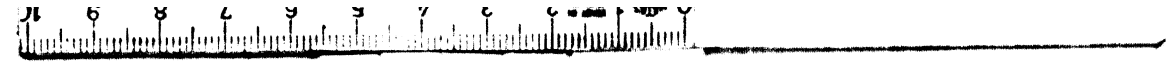

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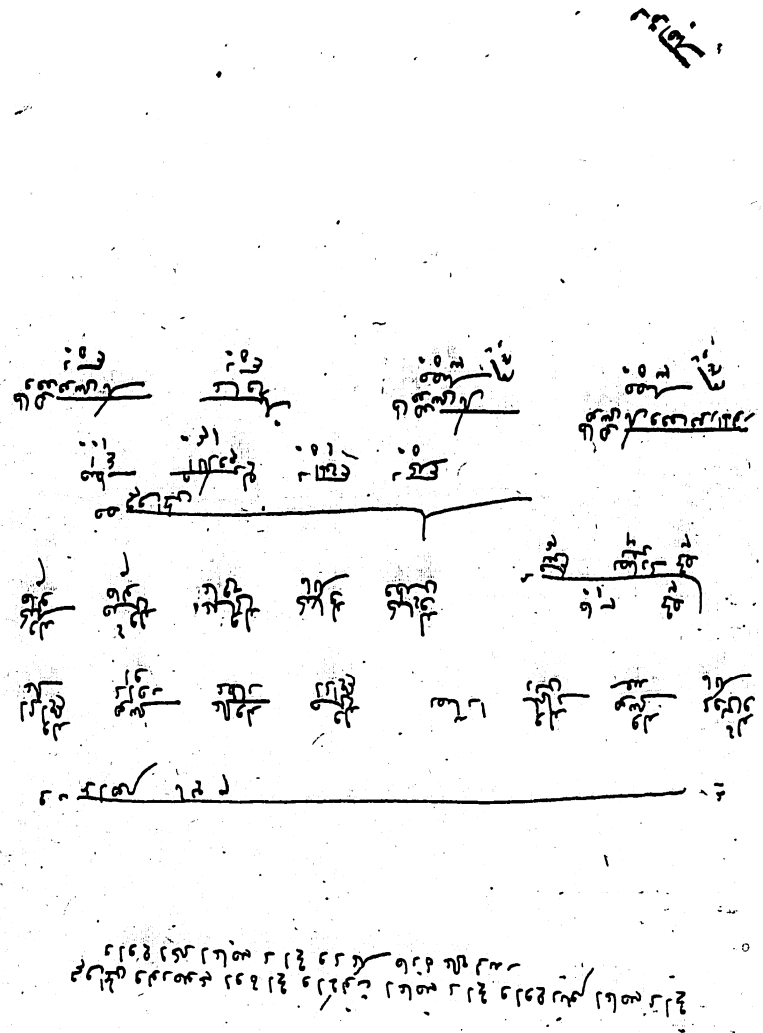

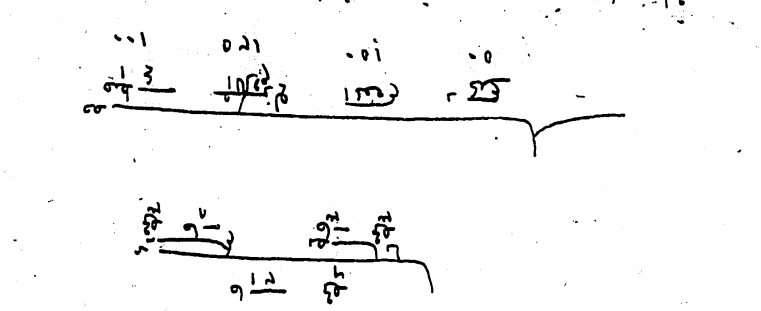

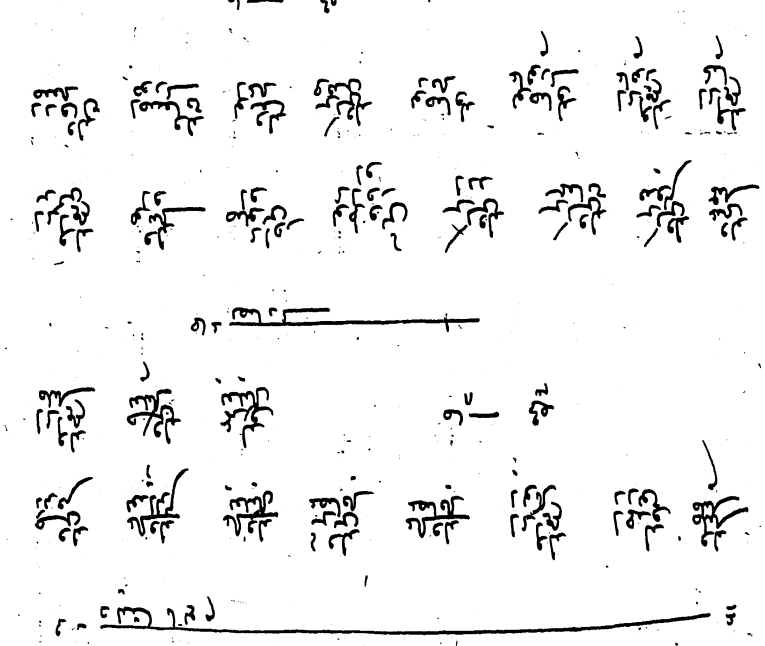

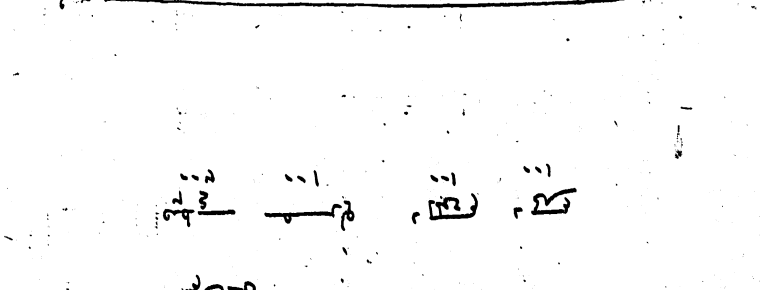

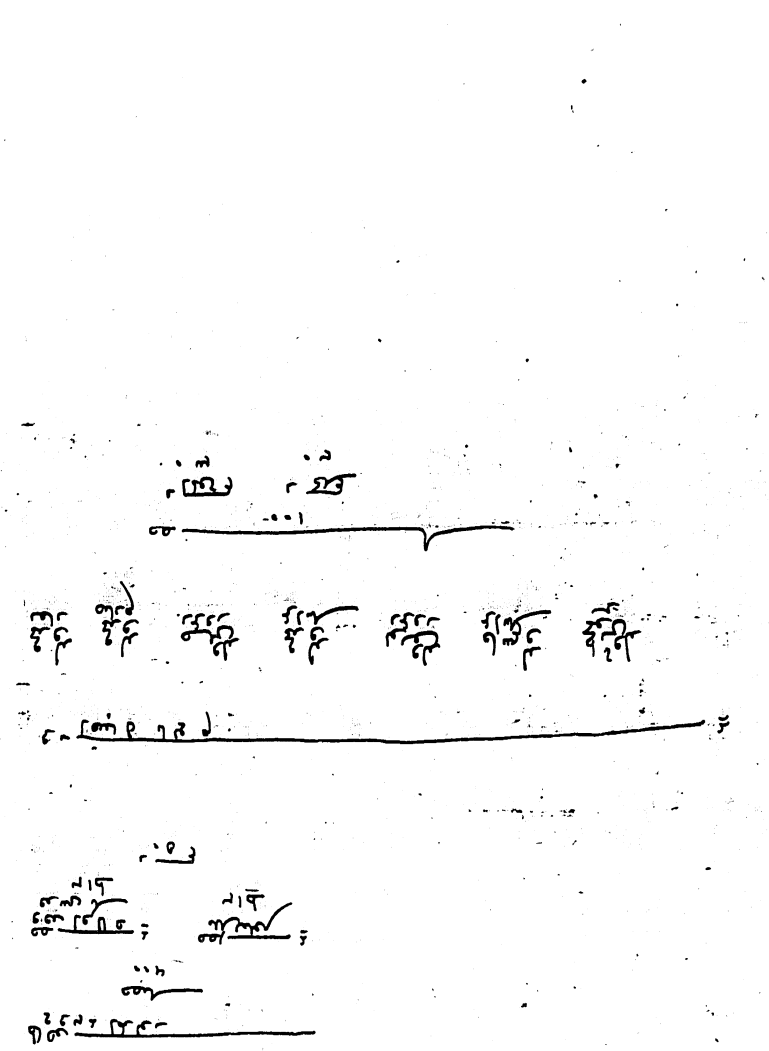

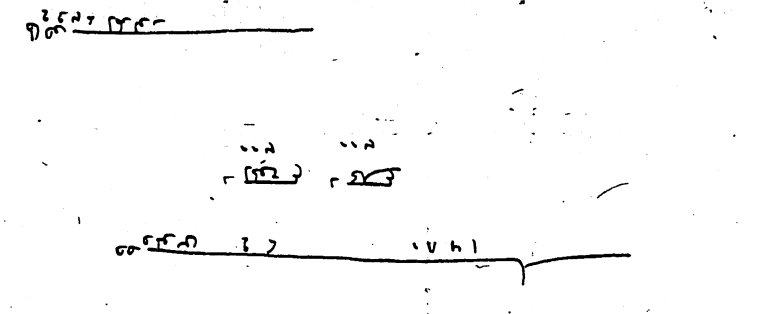

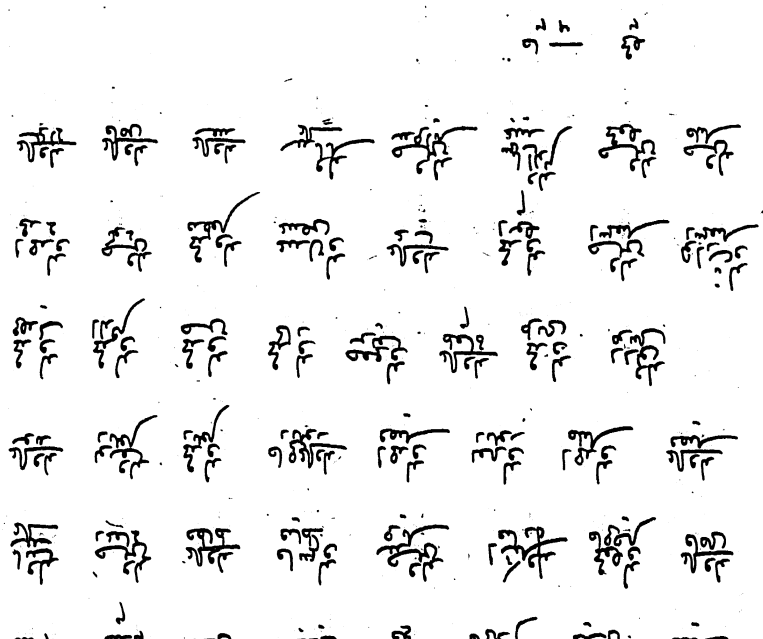

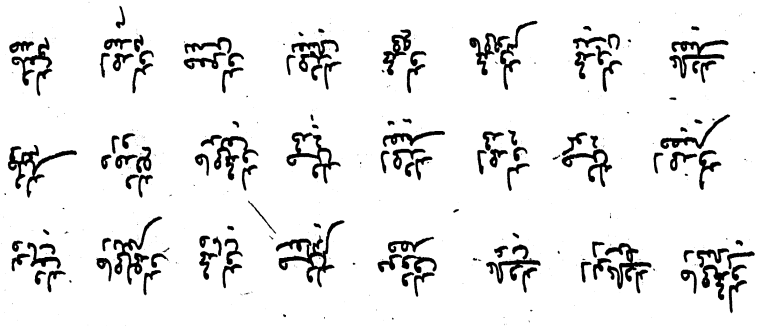

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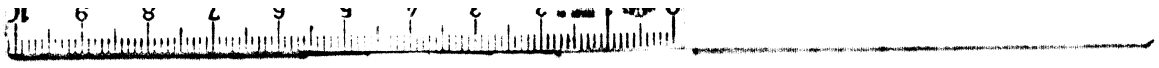

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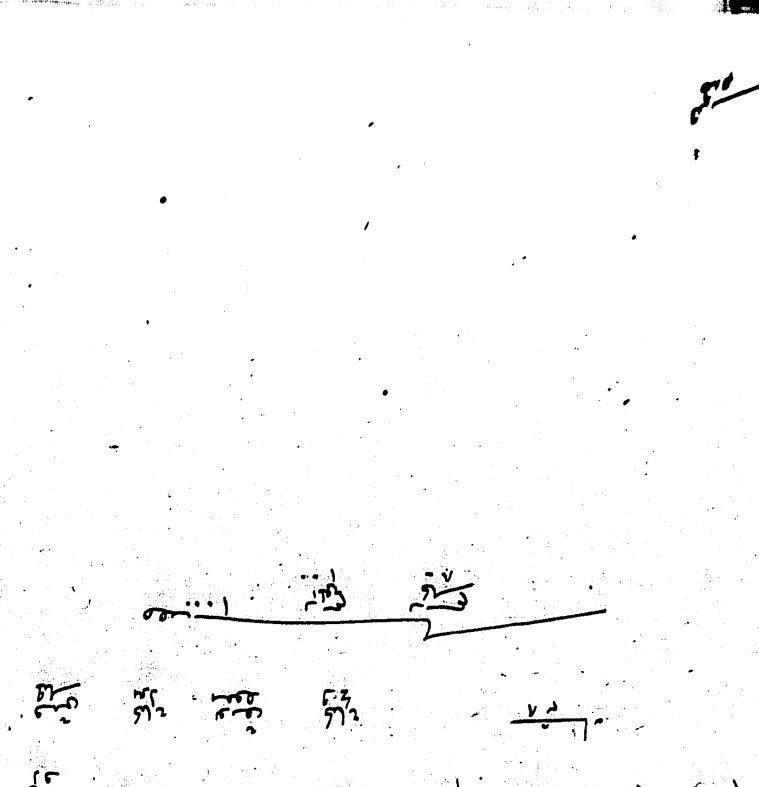

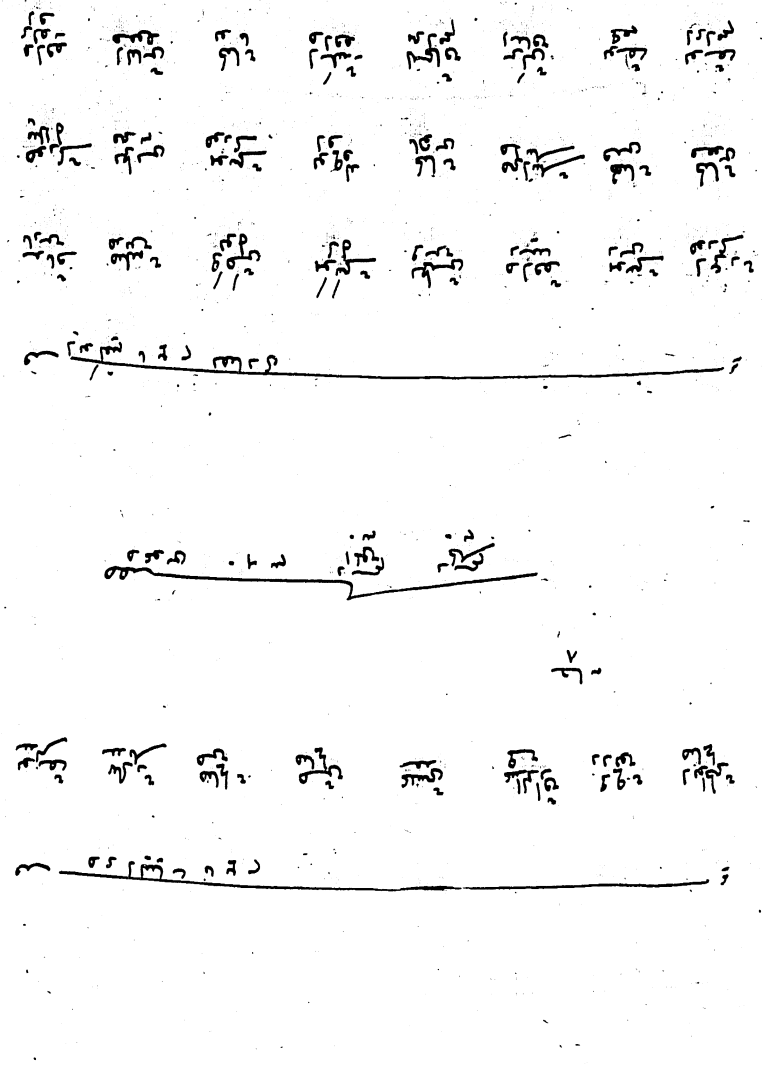

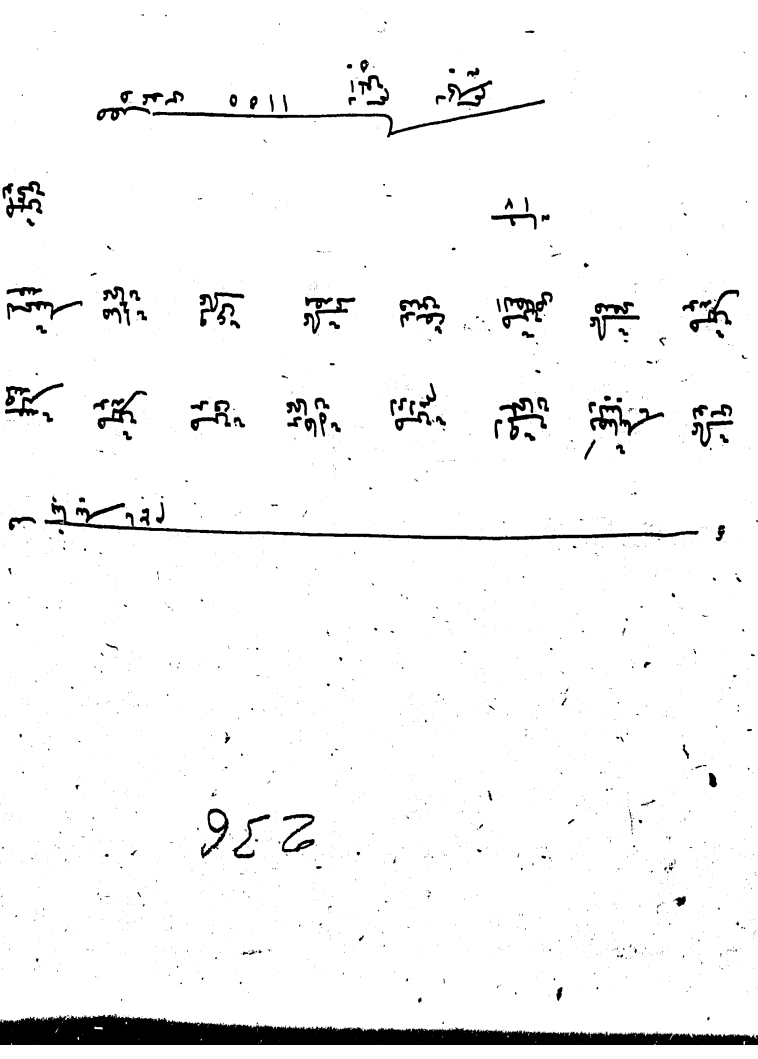

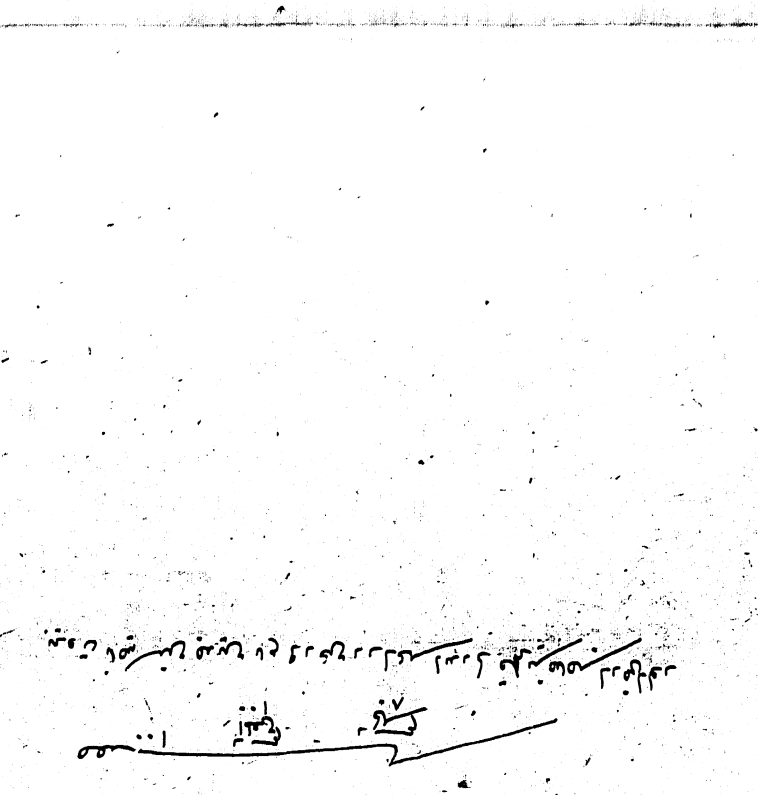

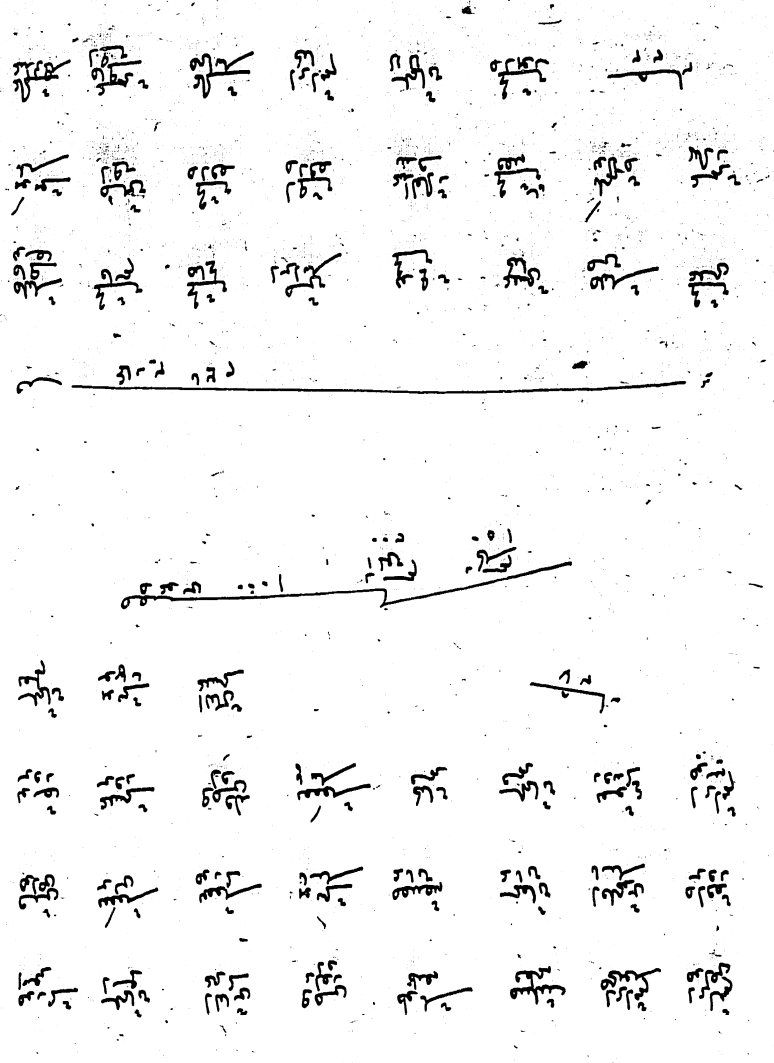

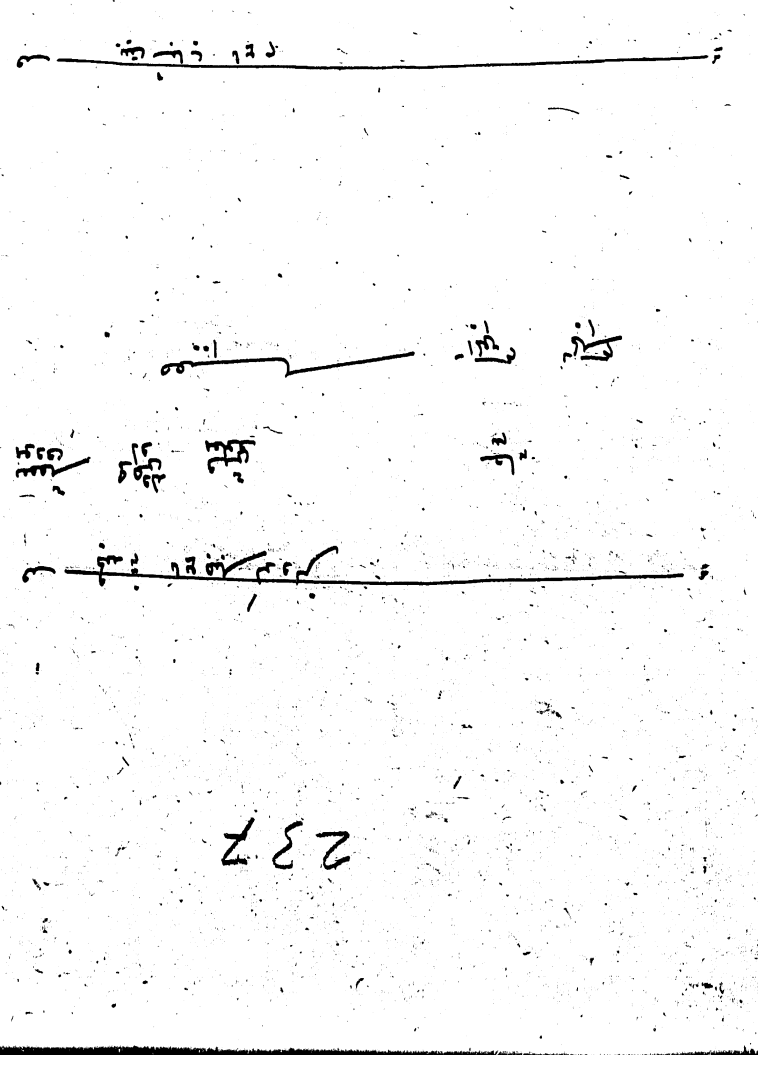

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حصير
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حصير
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ورد غزل تايم م
حصير
٢٠٠٠

ورد عنظور لطرز تايم م ورد يباع الكيلو
طبع كروف هوس تايم دين امريكور
يم طاهر ٤٠
حصير
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بالصين

ورد اعلا تايم م
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دين بمارور
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ورد لبنة تايم م
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ورد لبنة ورد لبنة لعمال لبنة لبنة من لاهور لجي فاز لبنة
نذ فاصر ادناه
حصير اوفان ٤ ٧
٣٧٥٦

ورد يافذرة تايم هنار لبنة ولبنة
حصير
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ورد عنان لفاقذرة تايم م
حصير
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ورد بلوتيه تايم م
حصير
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ورد زنبدر تايم م
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ورد ساوية تايم م
حصير
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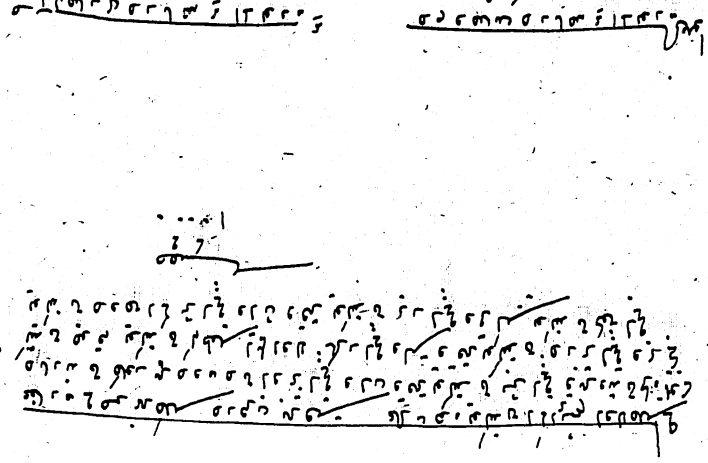

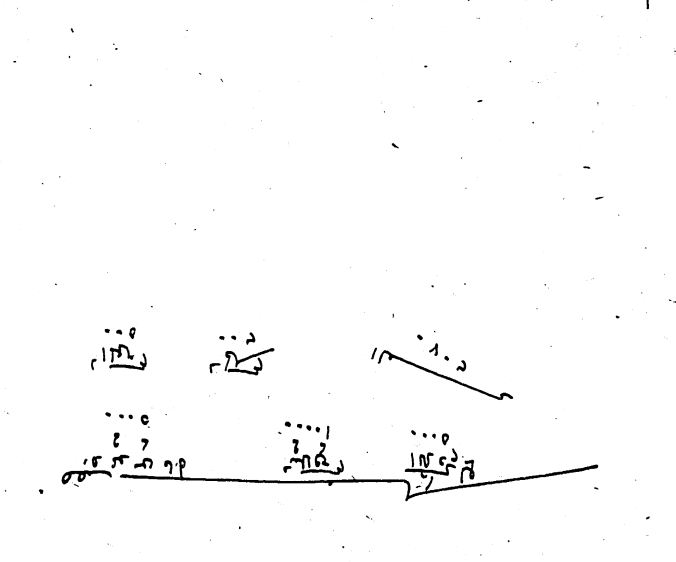

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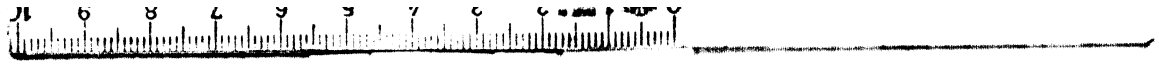

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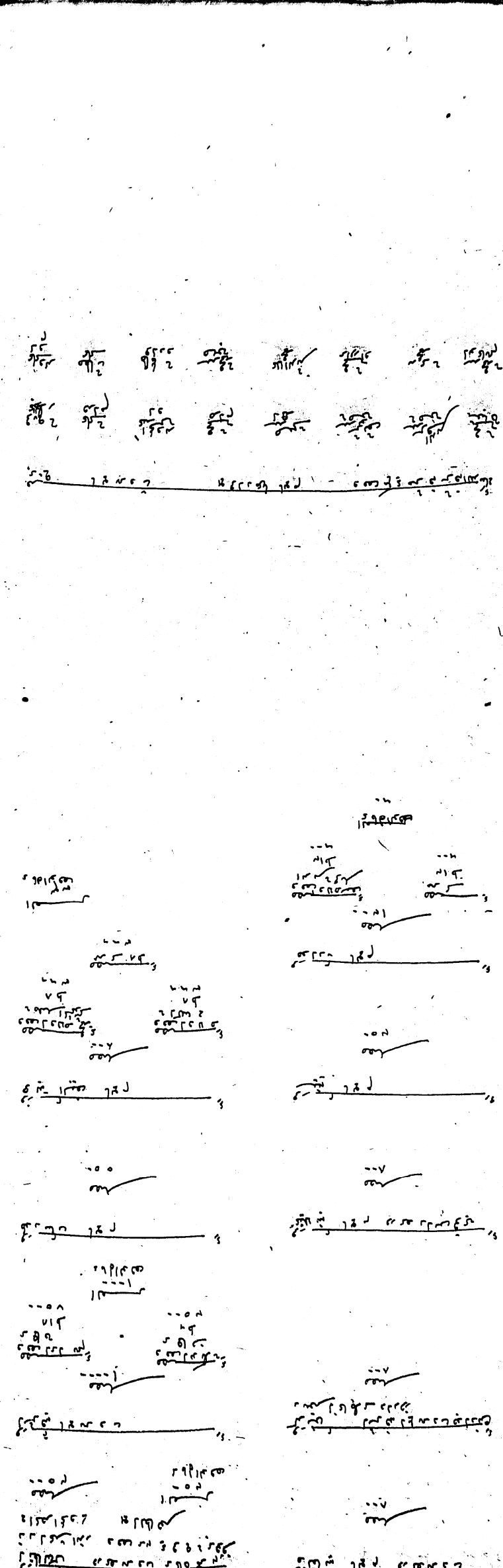

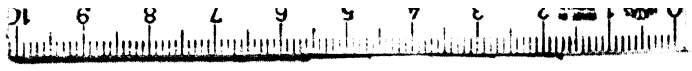

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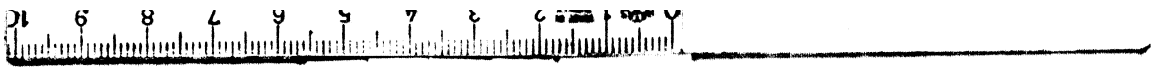

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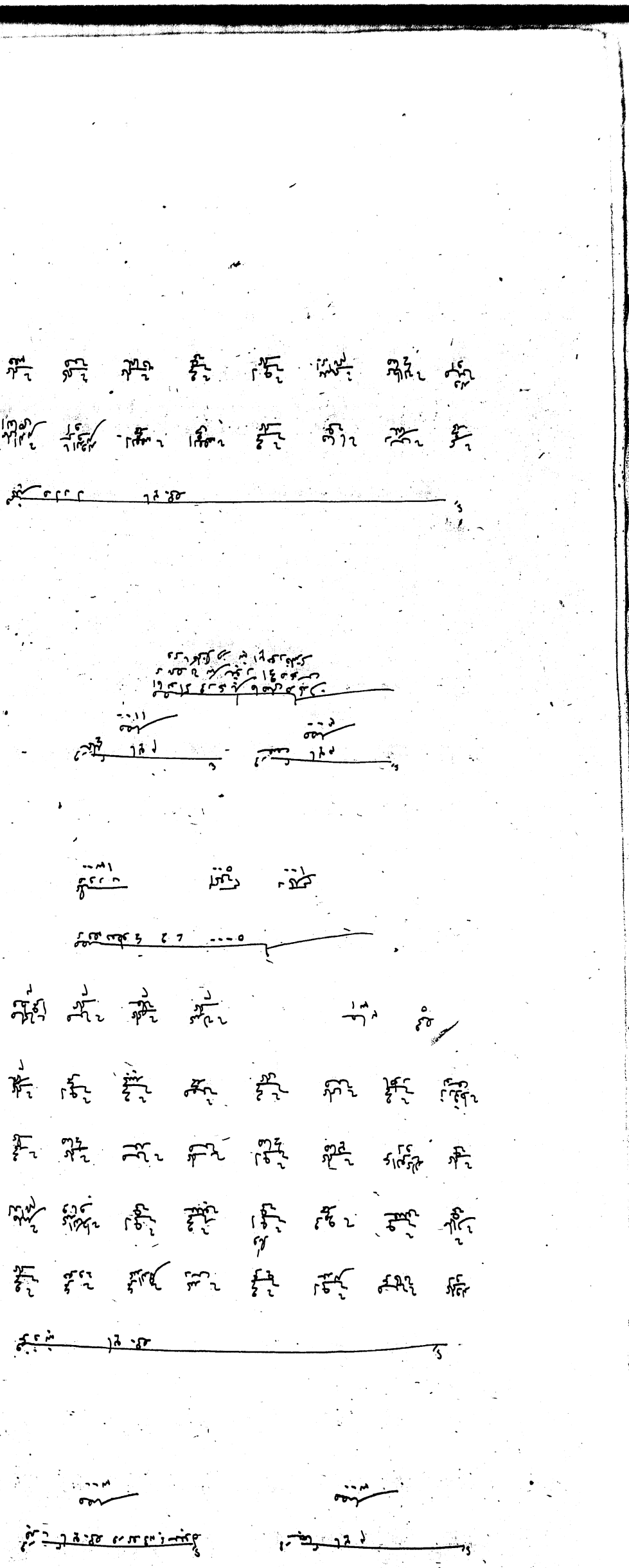

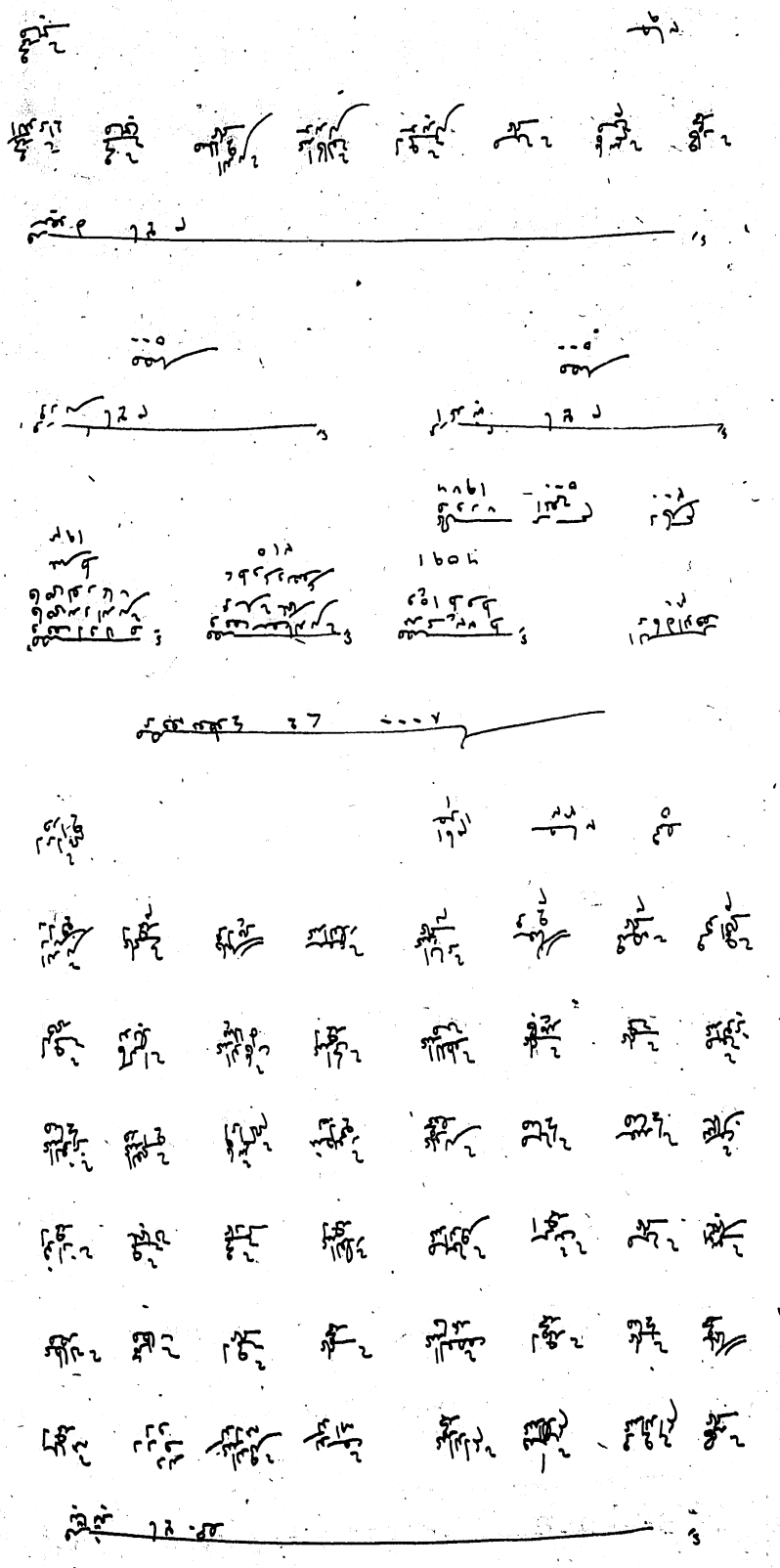

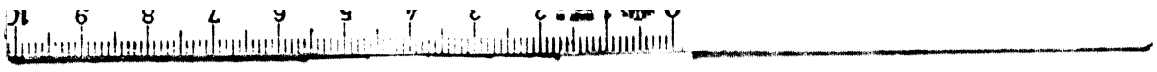

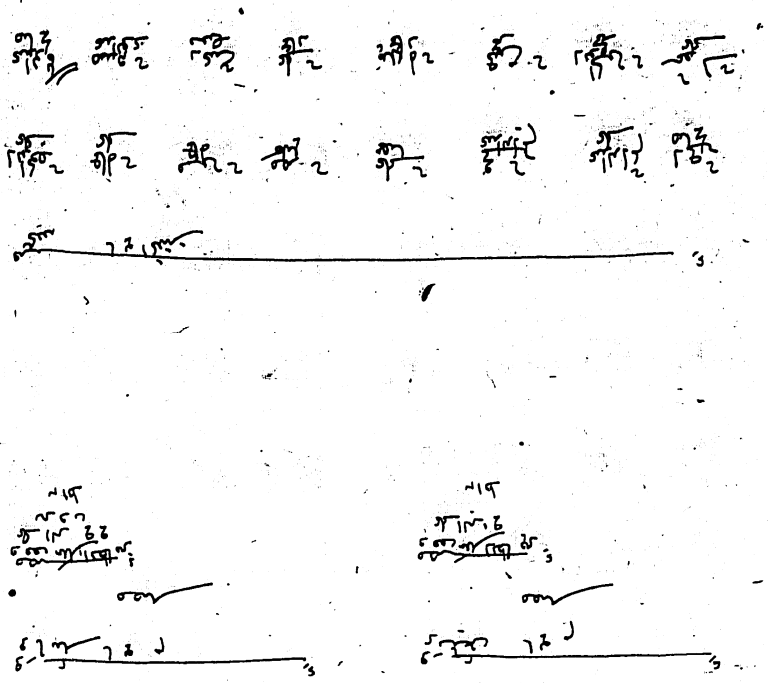

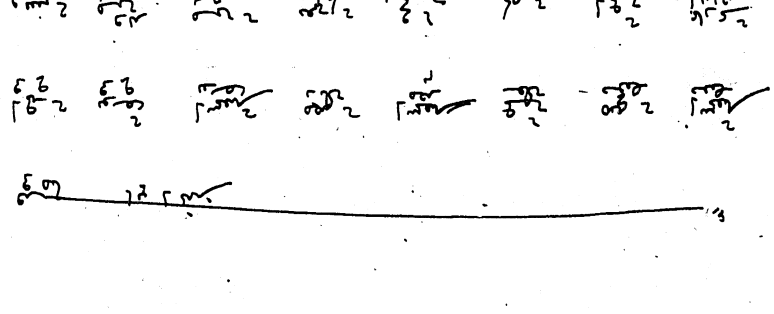

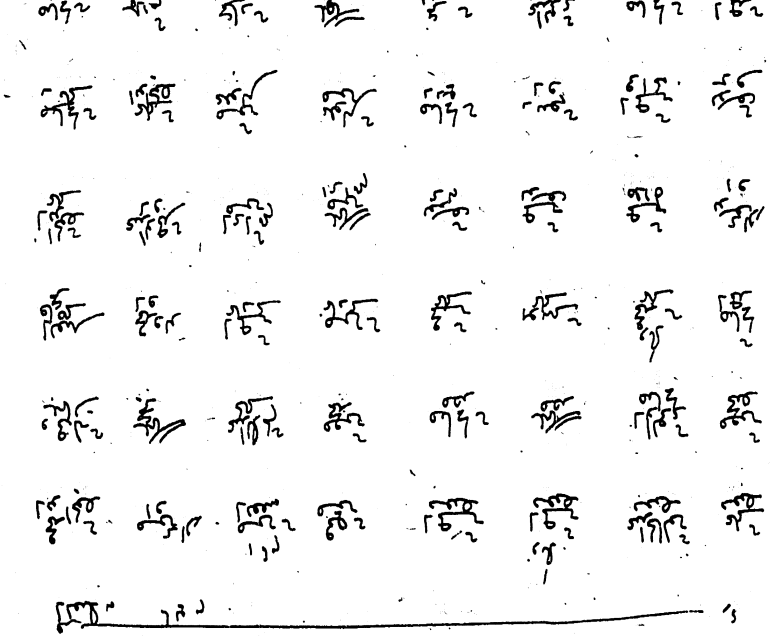

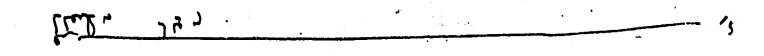

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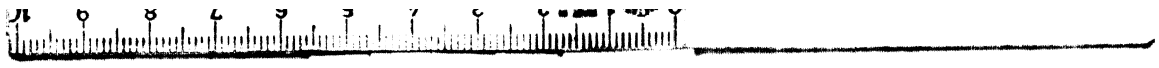

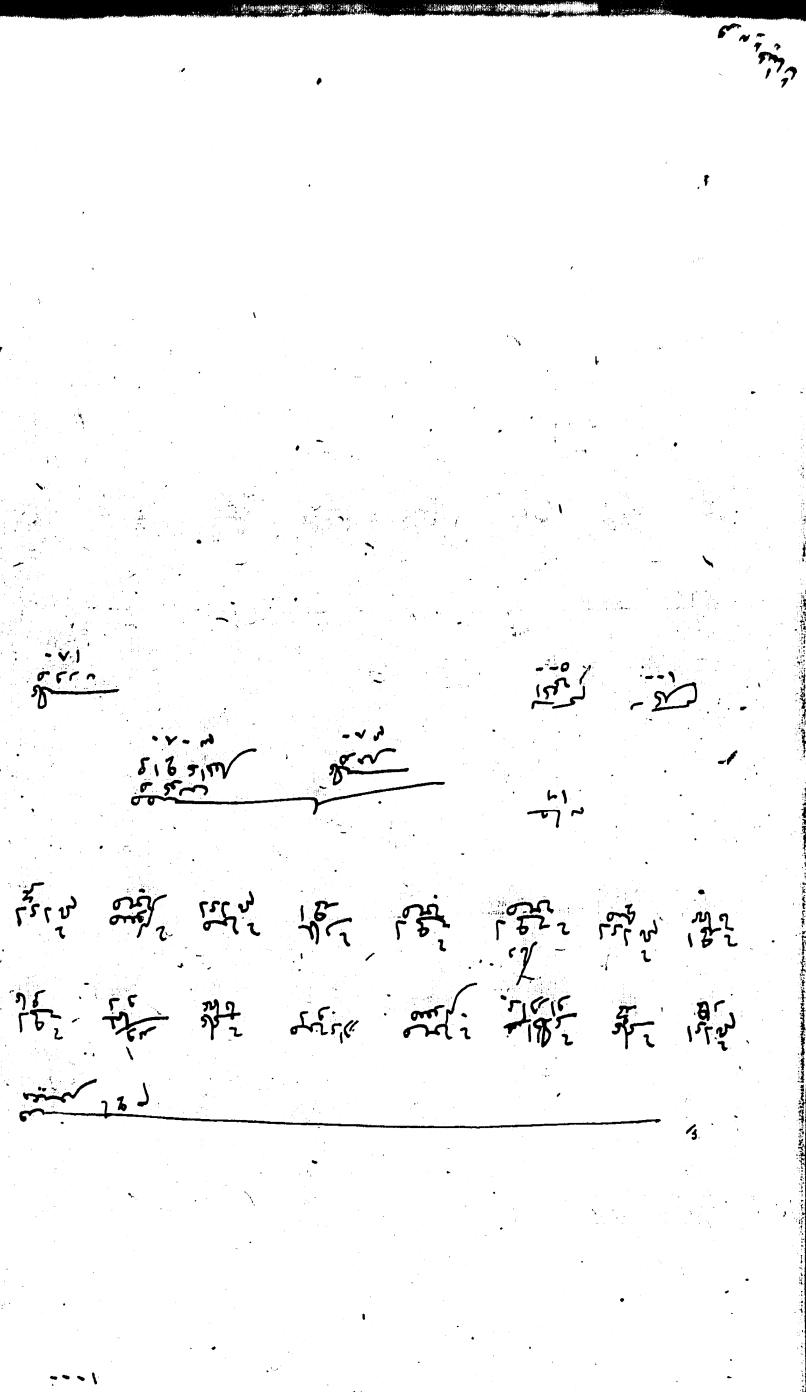

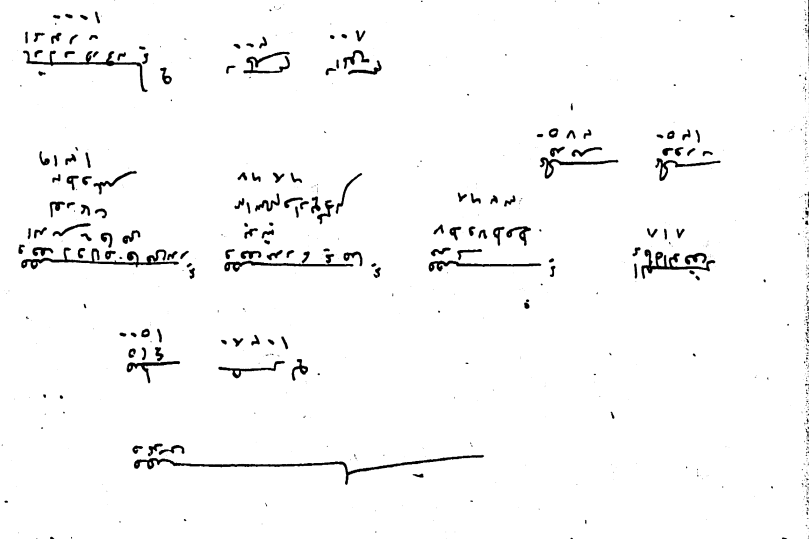

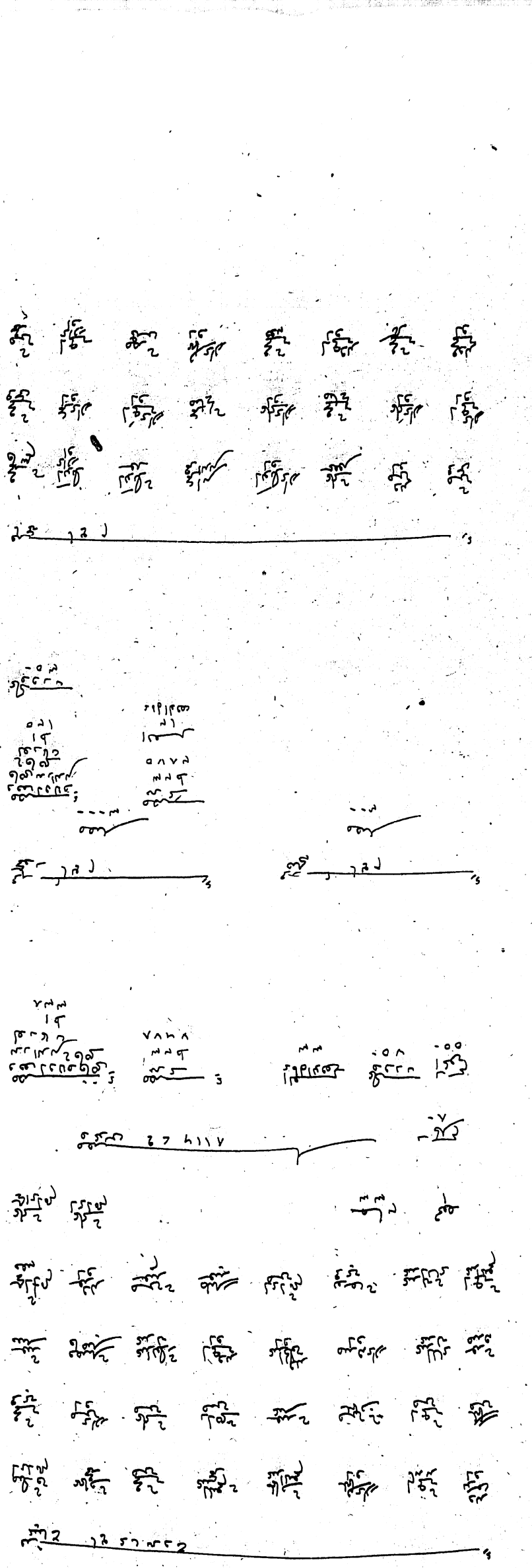

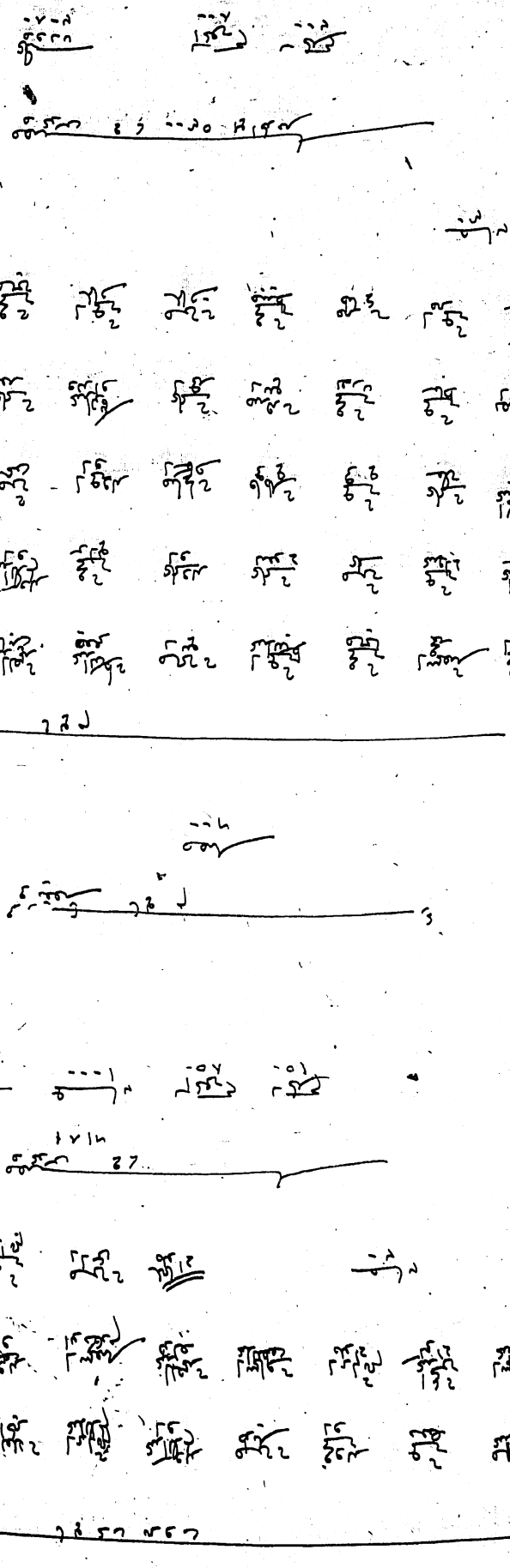

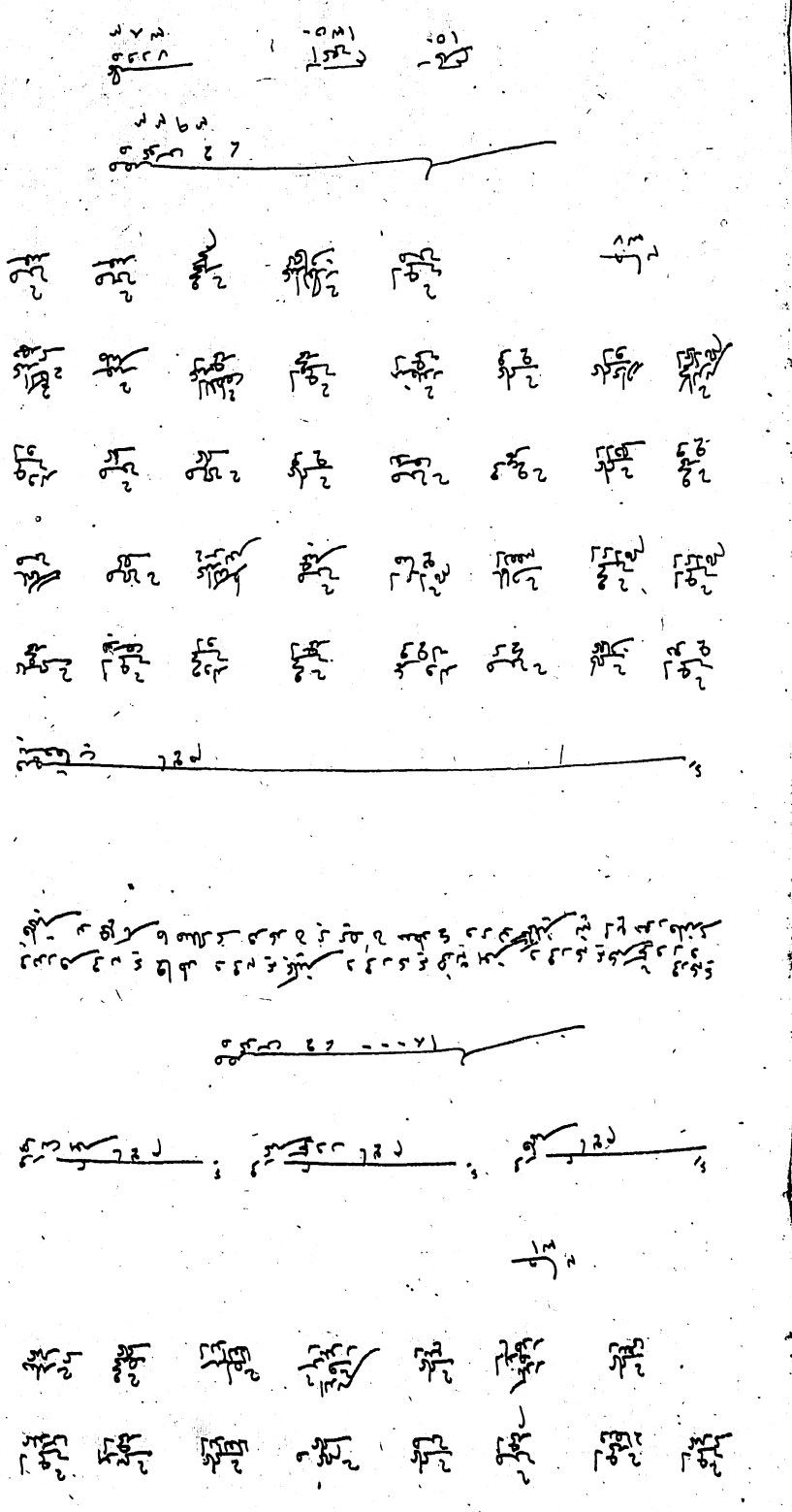

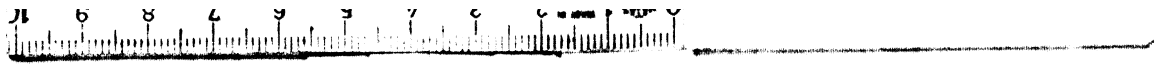

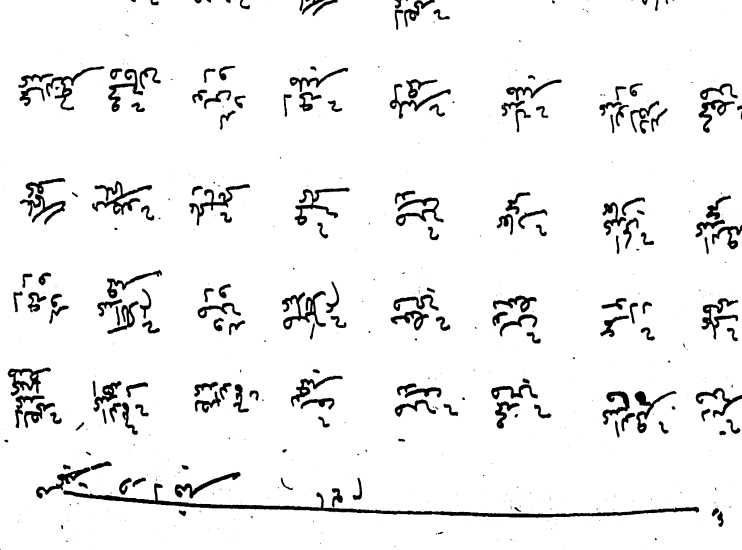

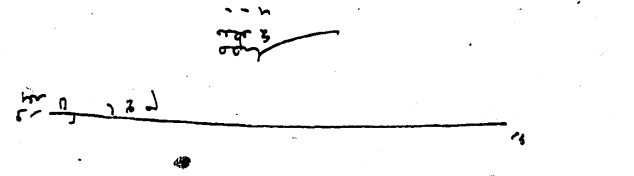

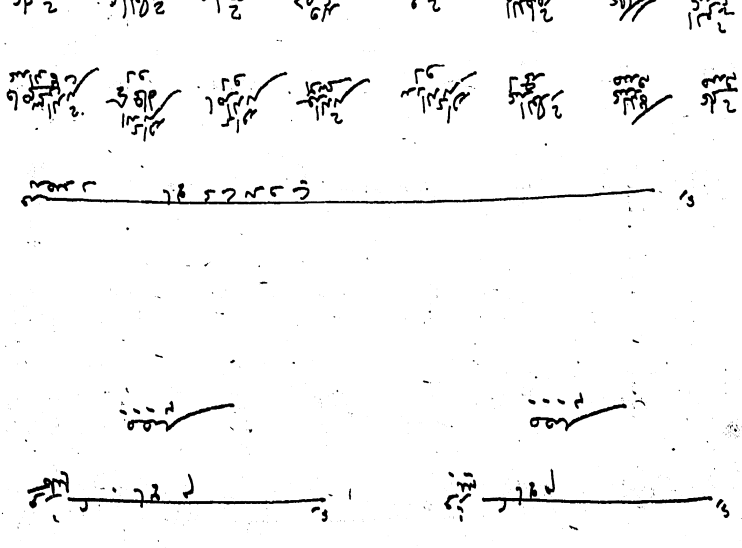

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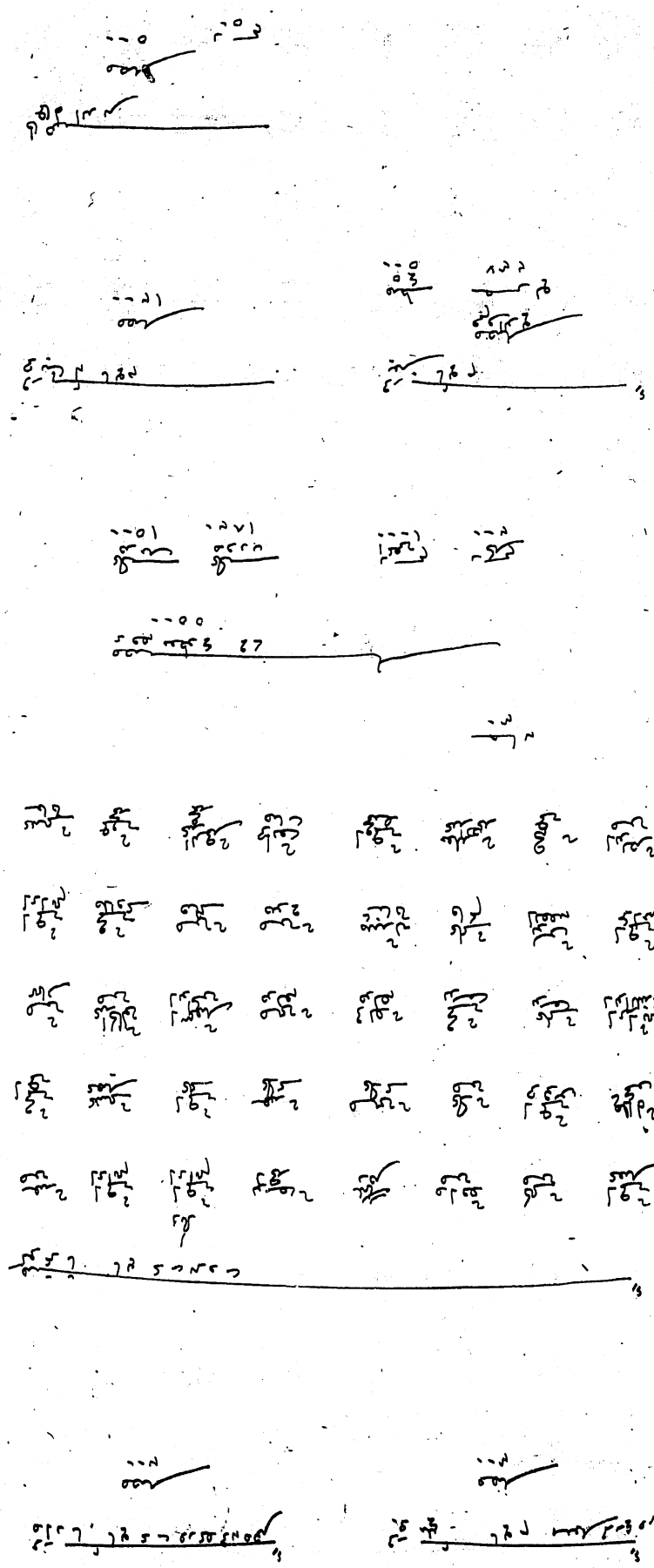

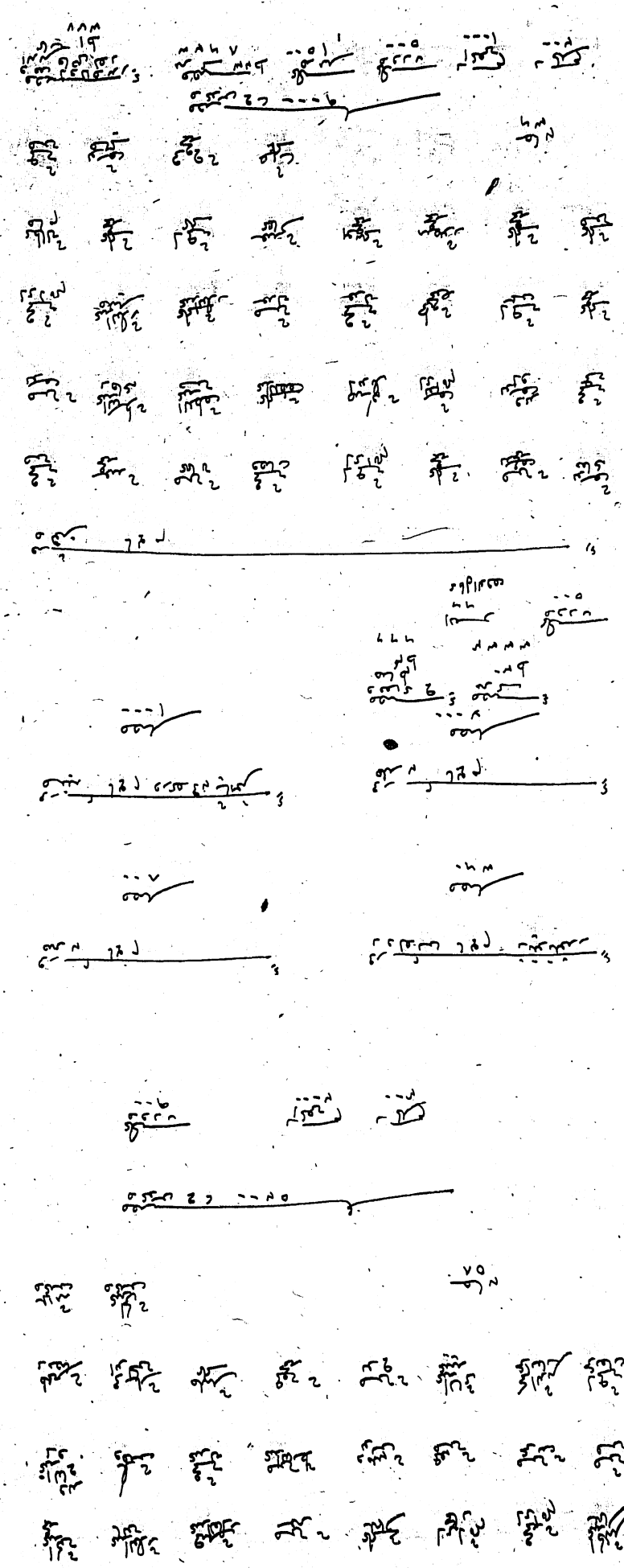

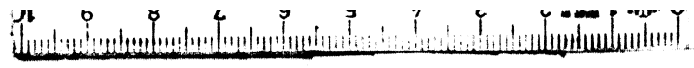

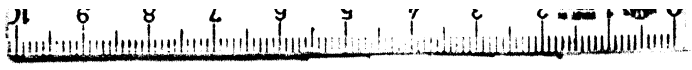

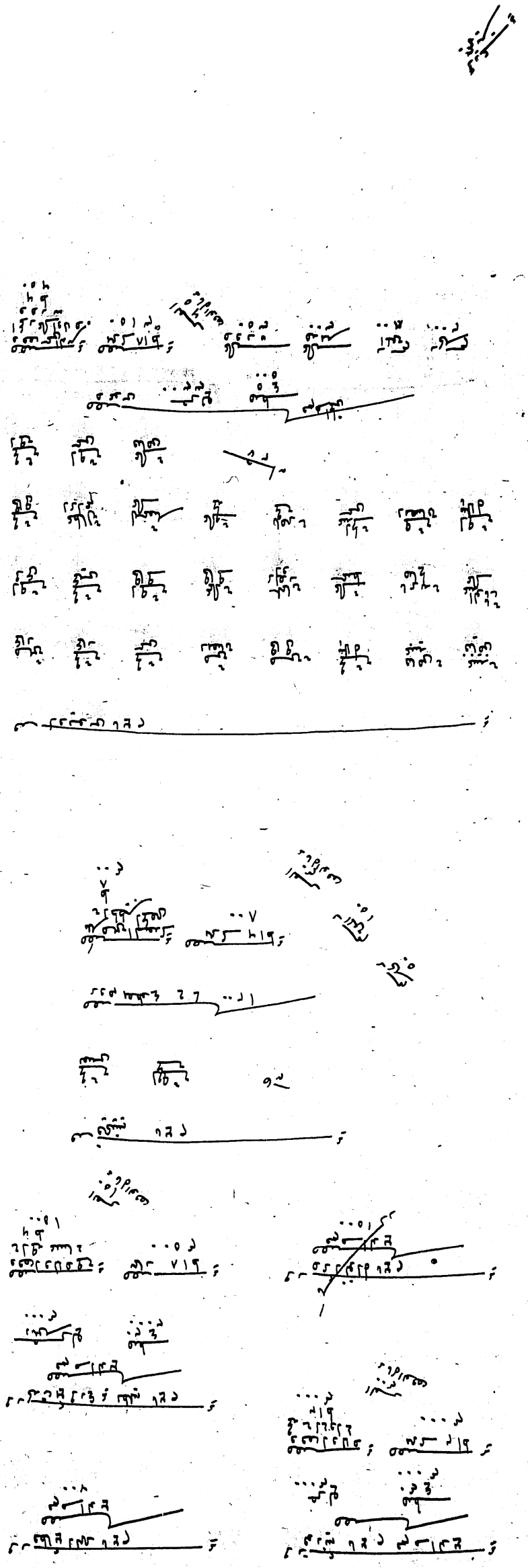

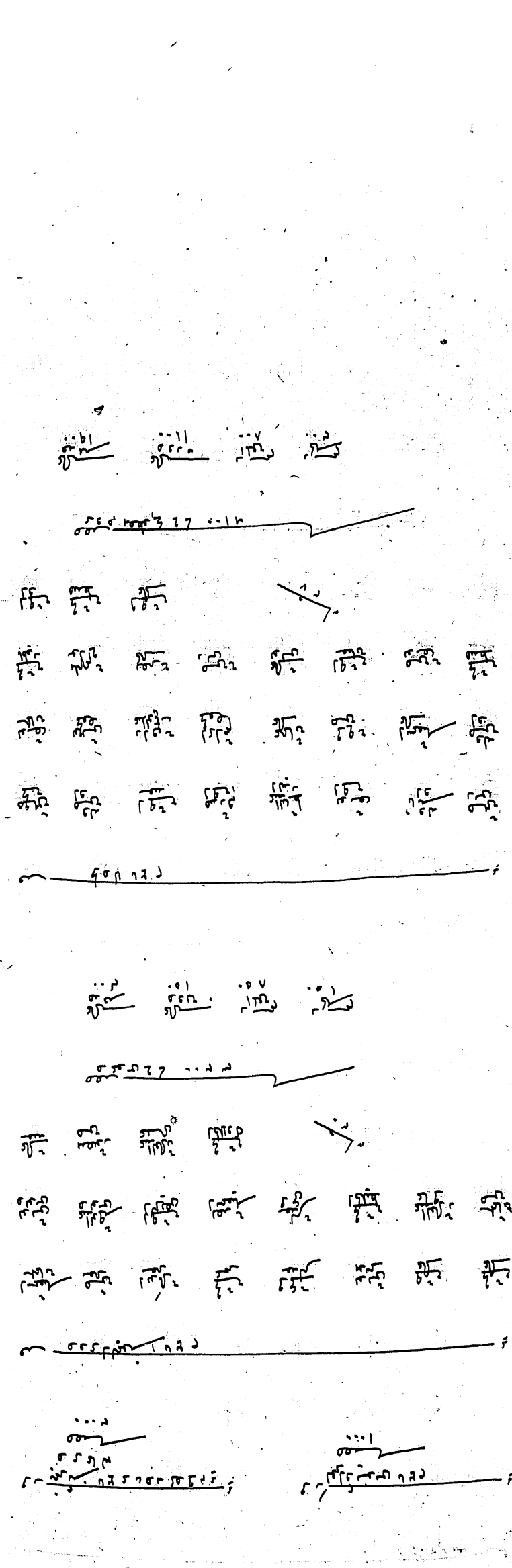

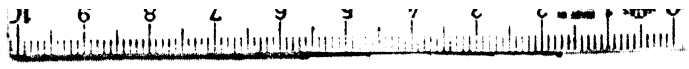

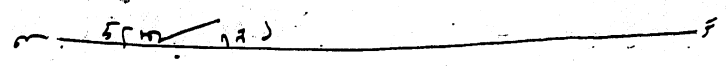

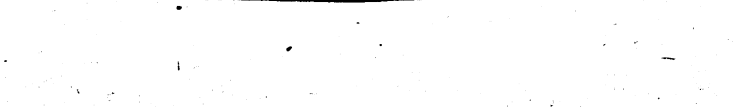

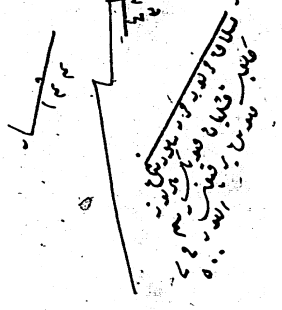

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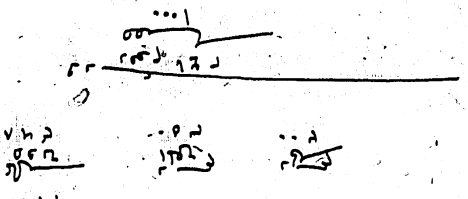

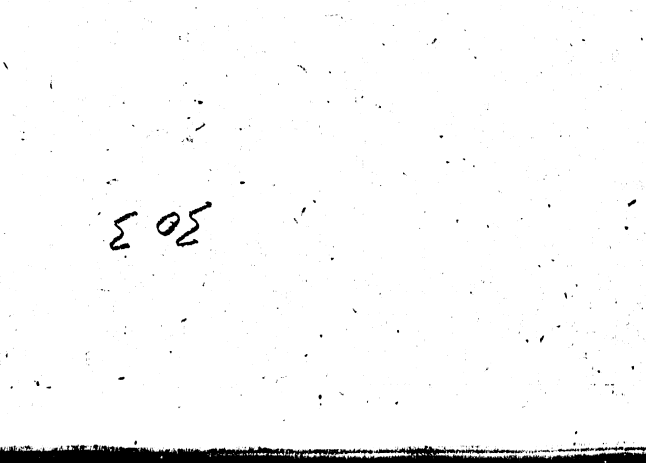

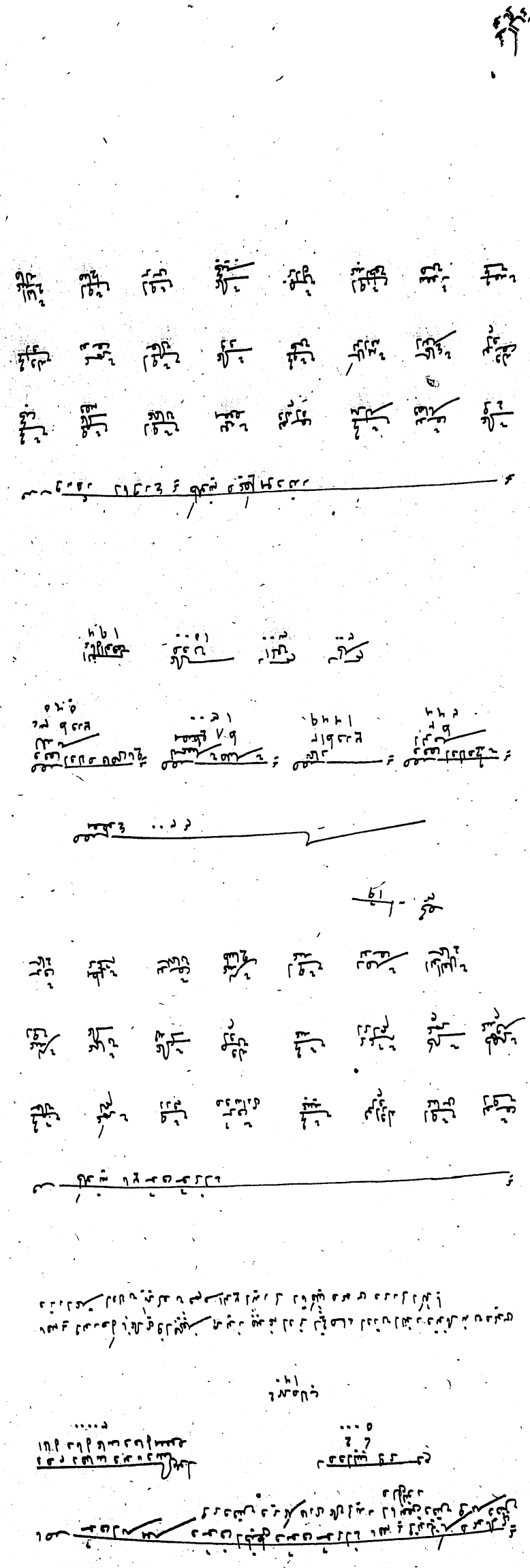

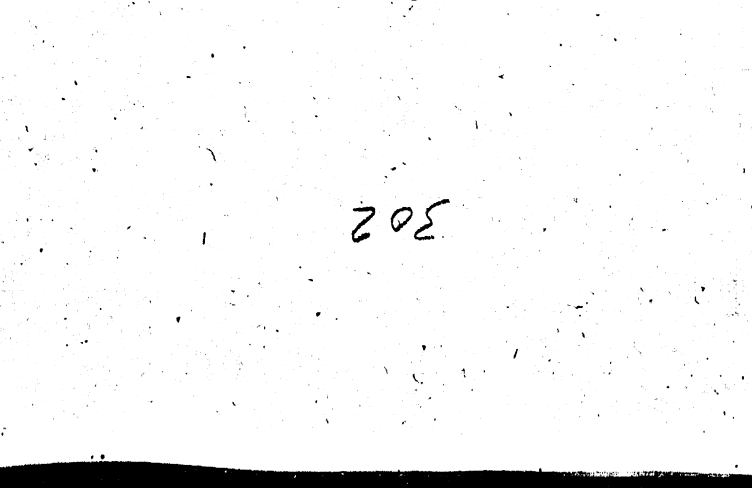

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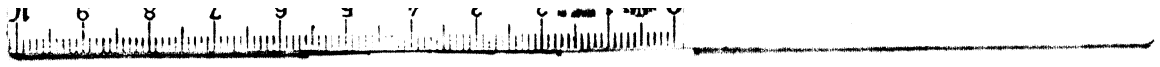

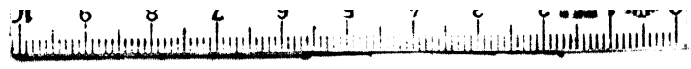

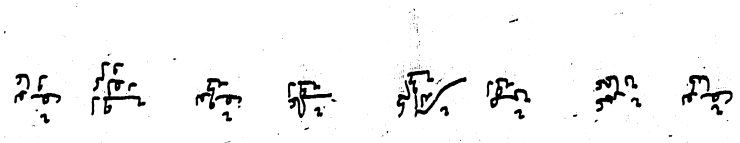

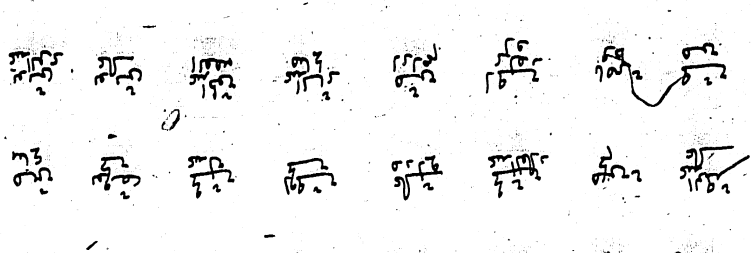

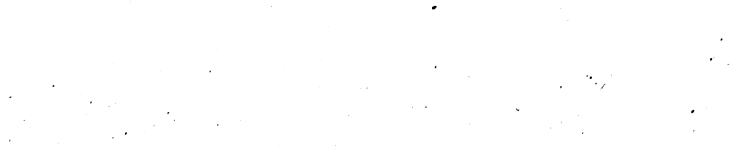

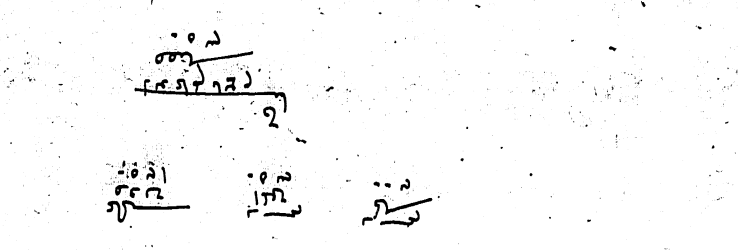

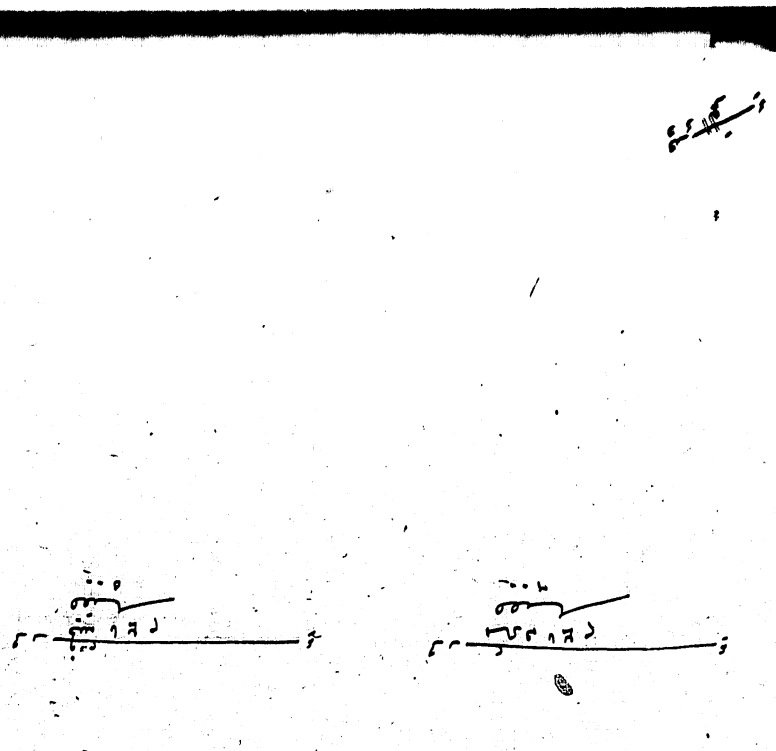

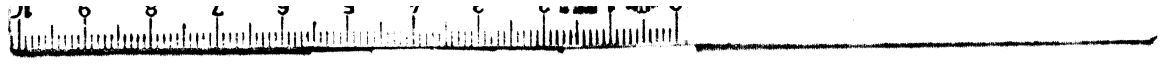

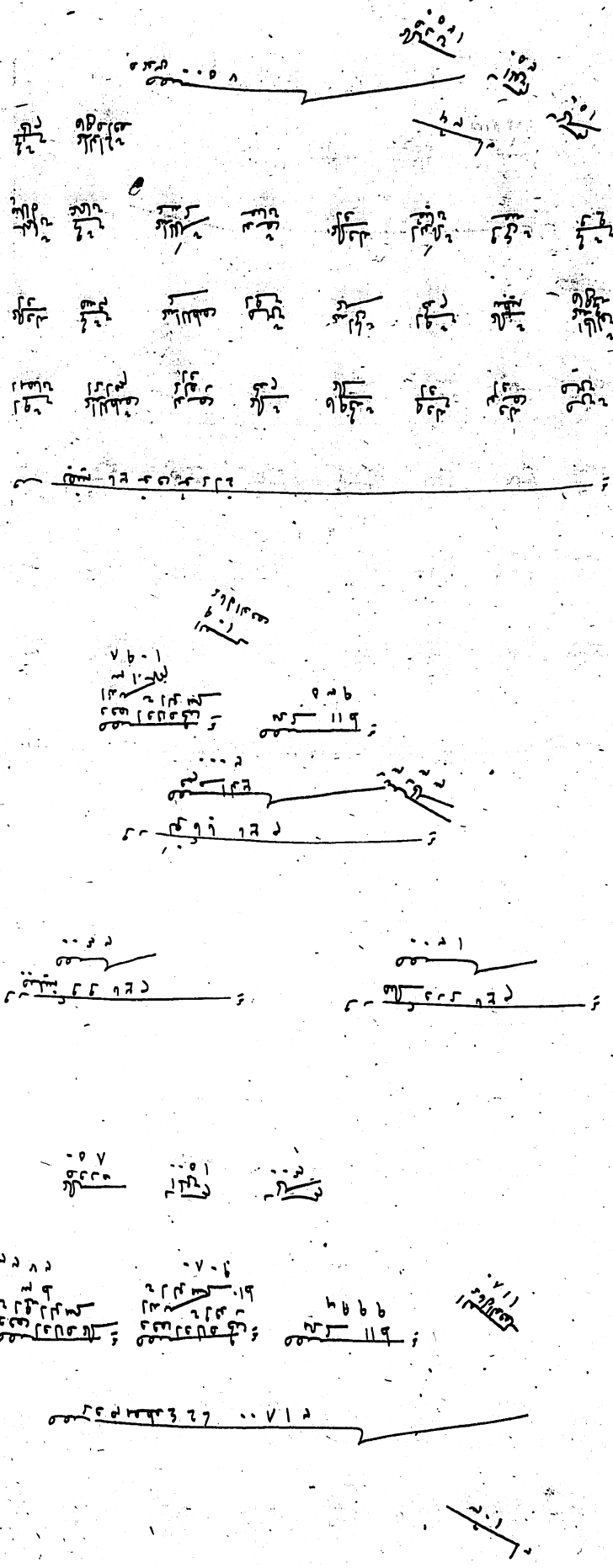

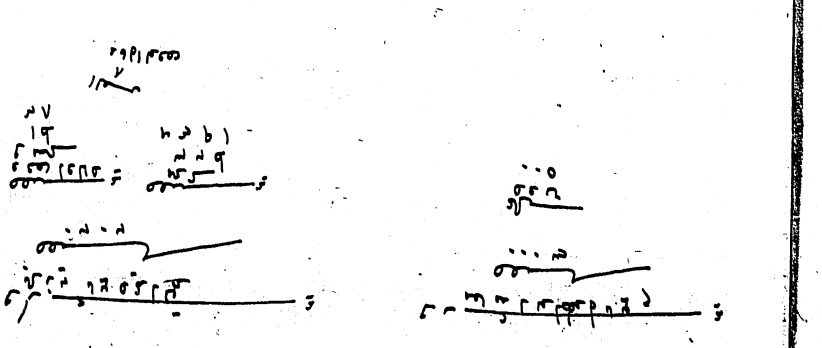

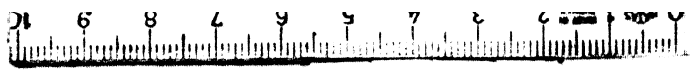

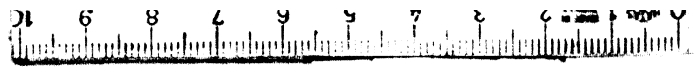

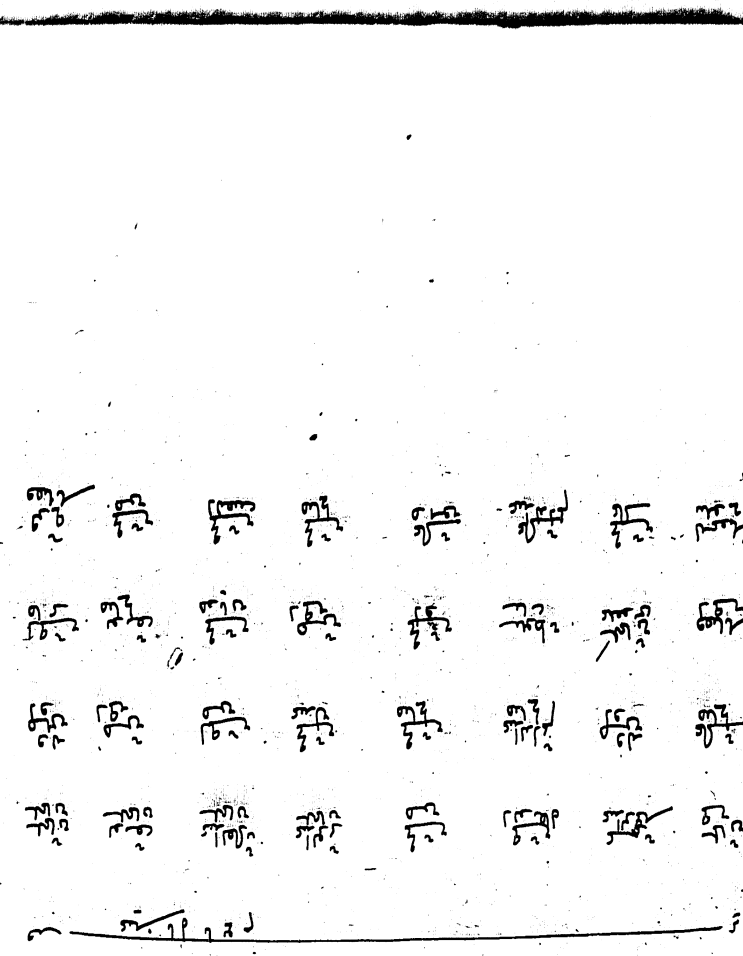

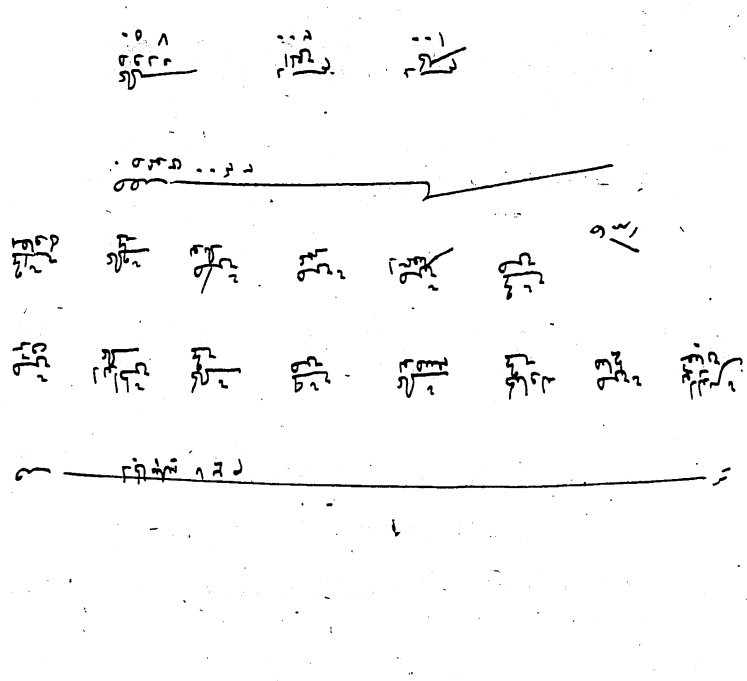

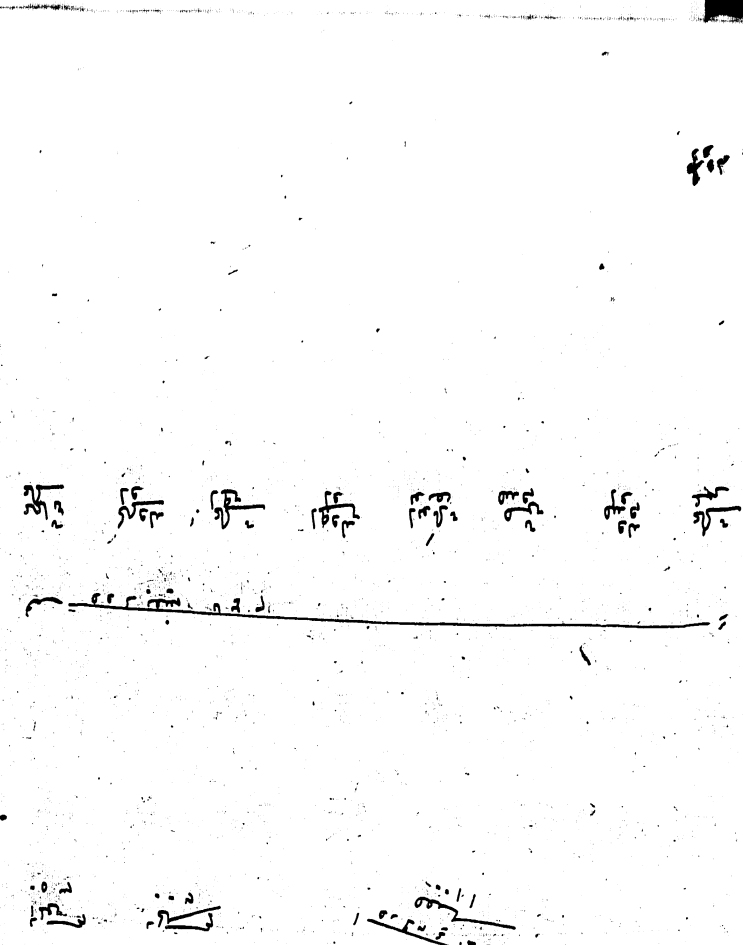

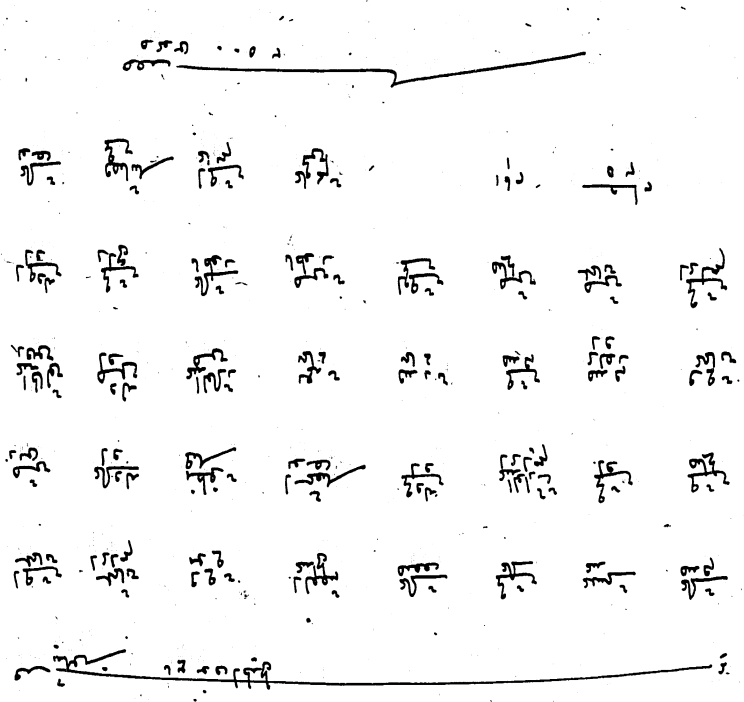

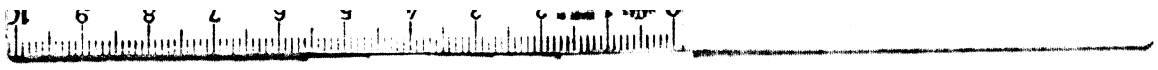

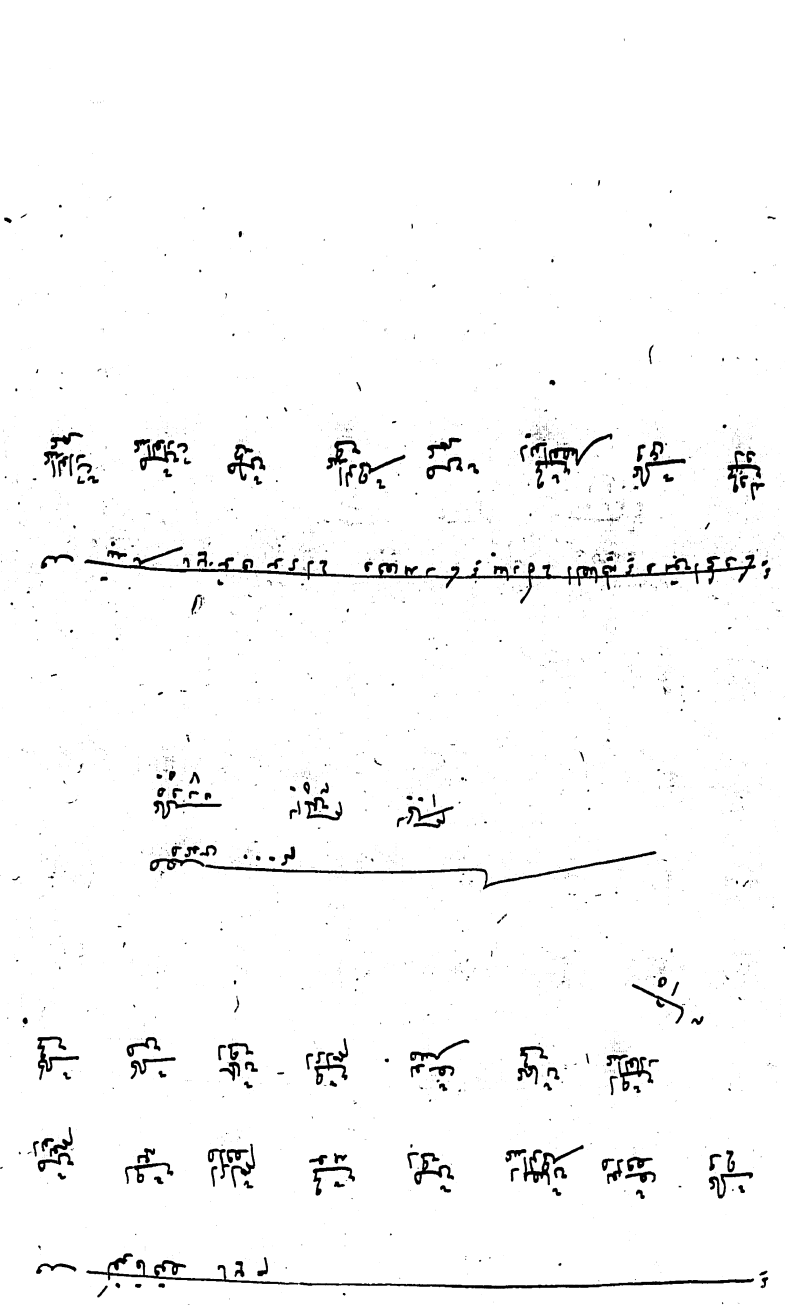

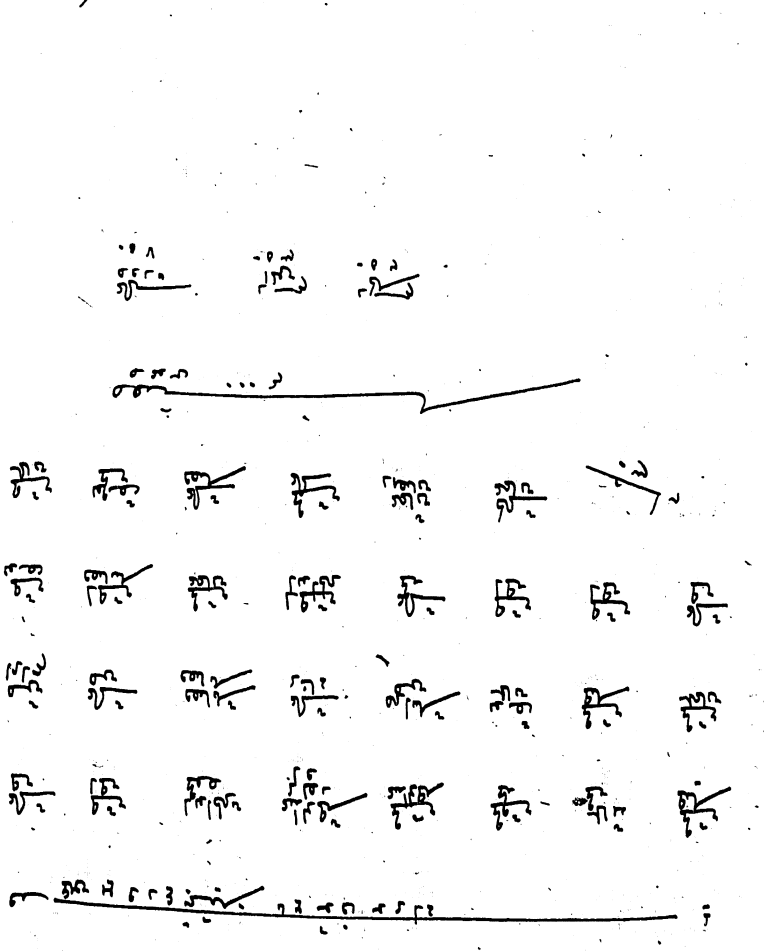

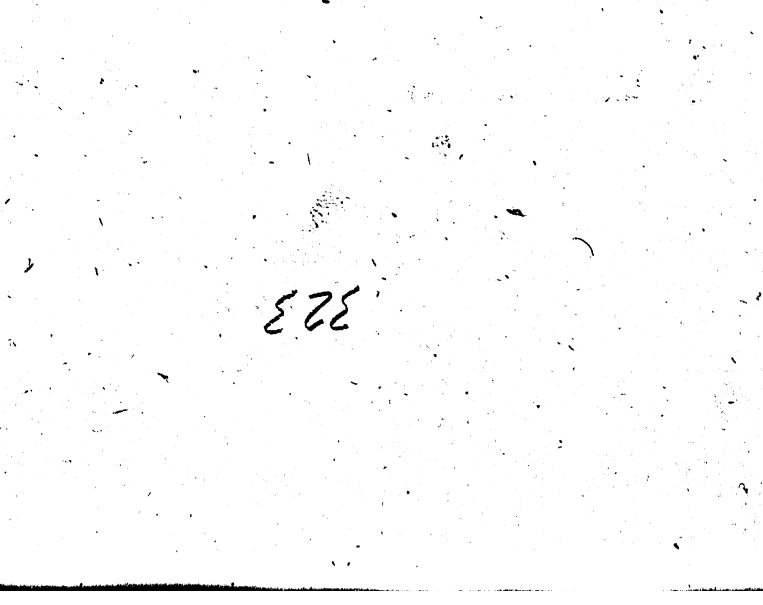

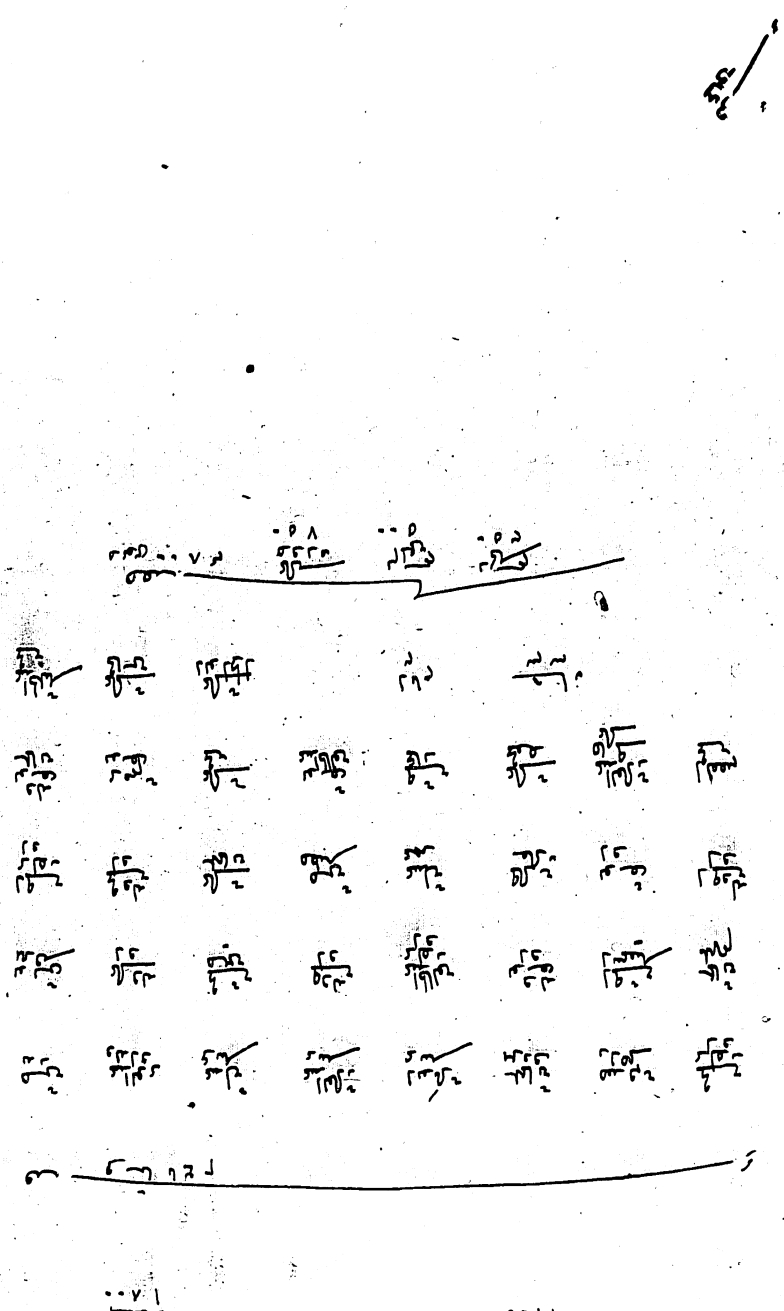

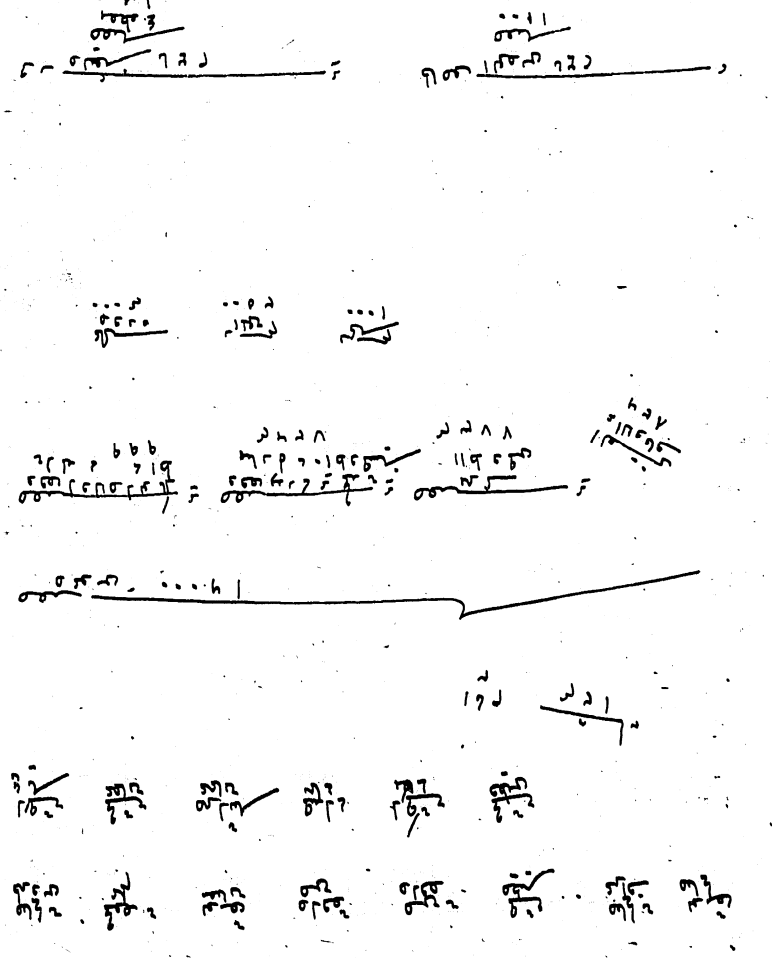

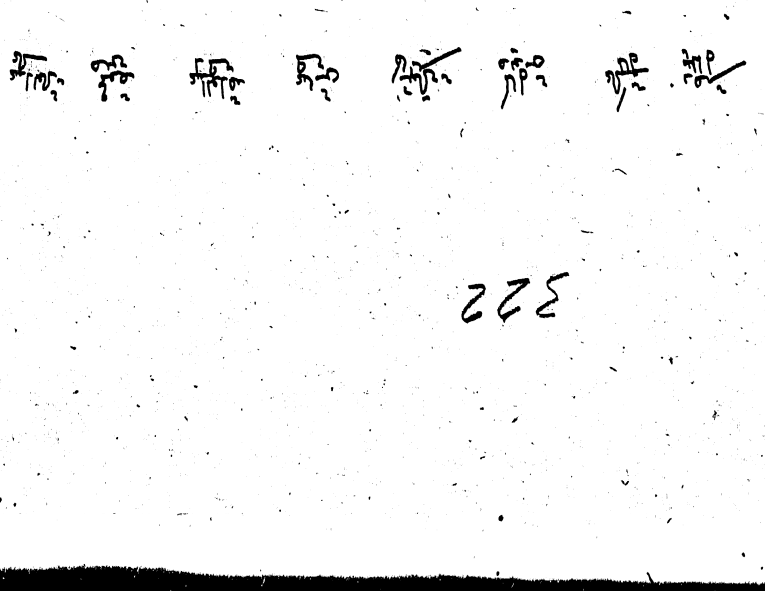

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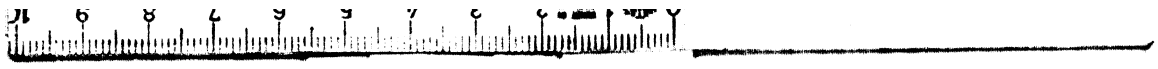

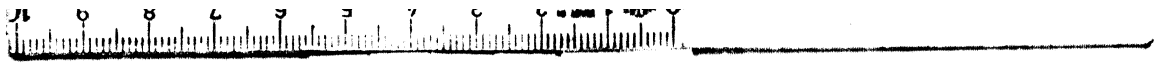

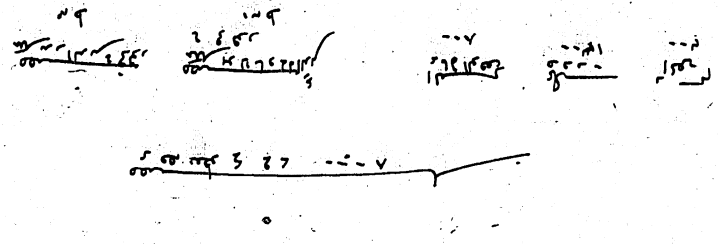

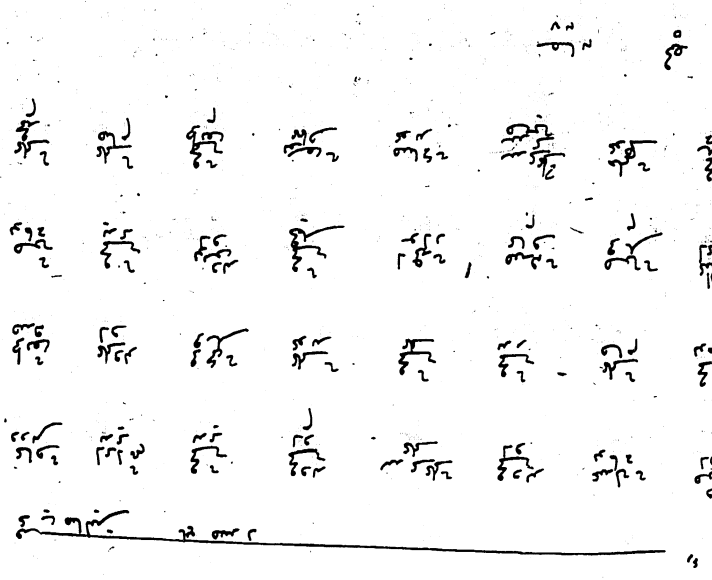

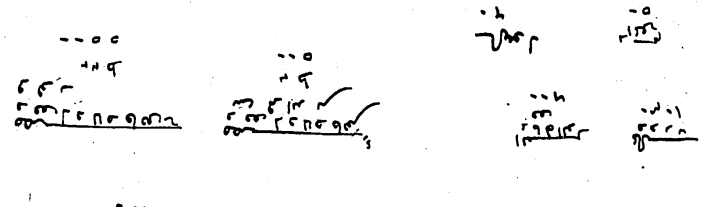

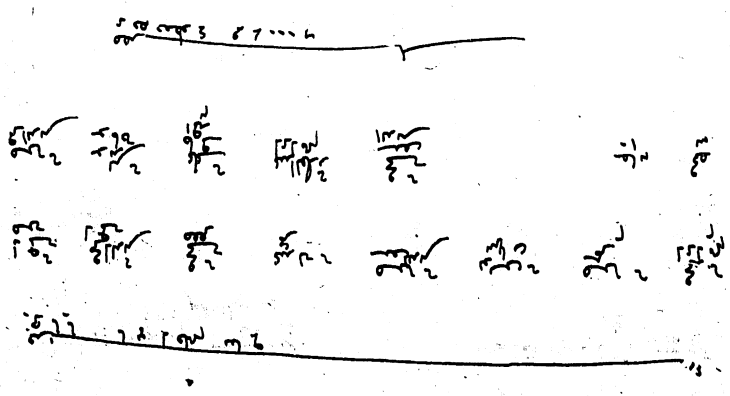

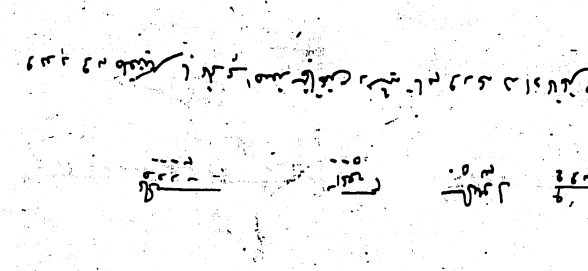

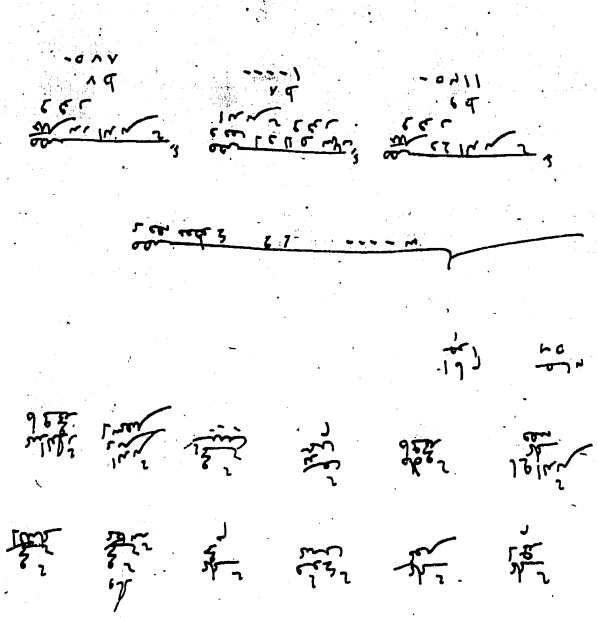

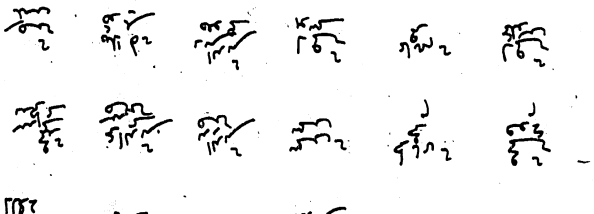

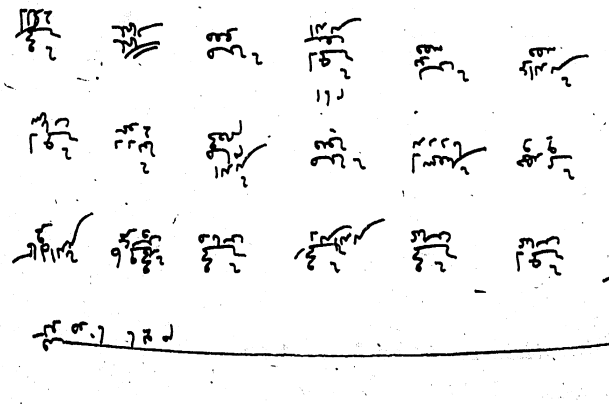

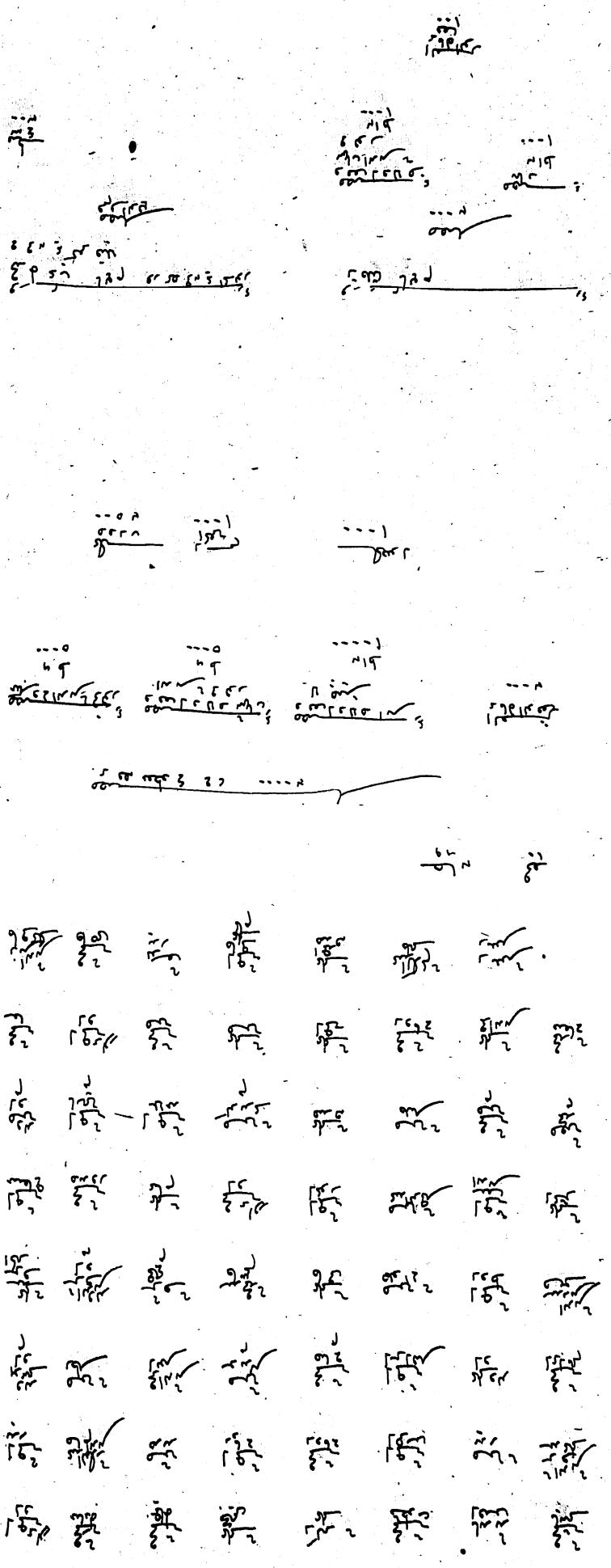

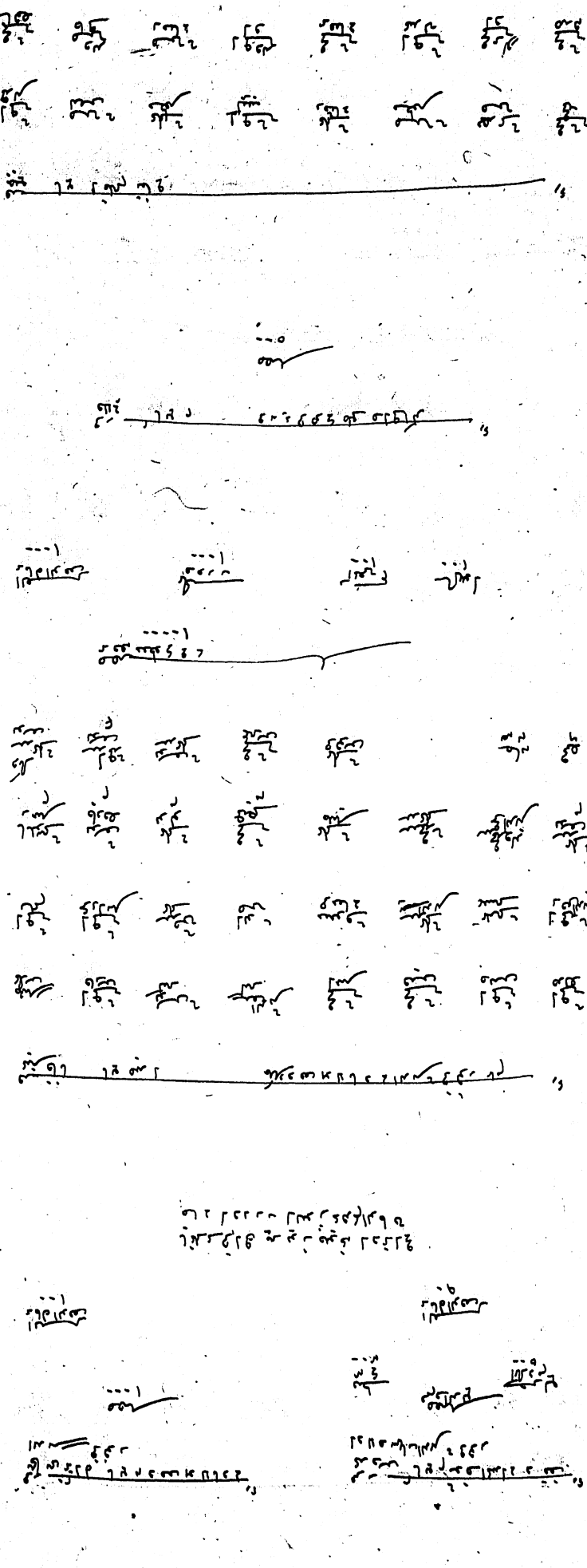

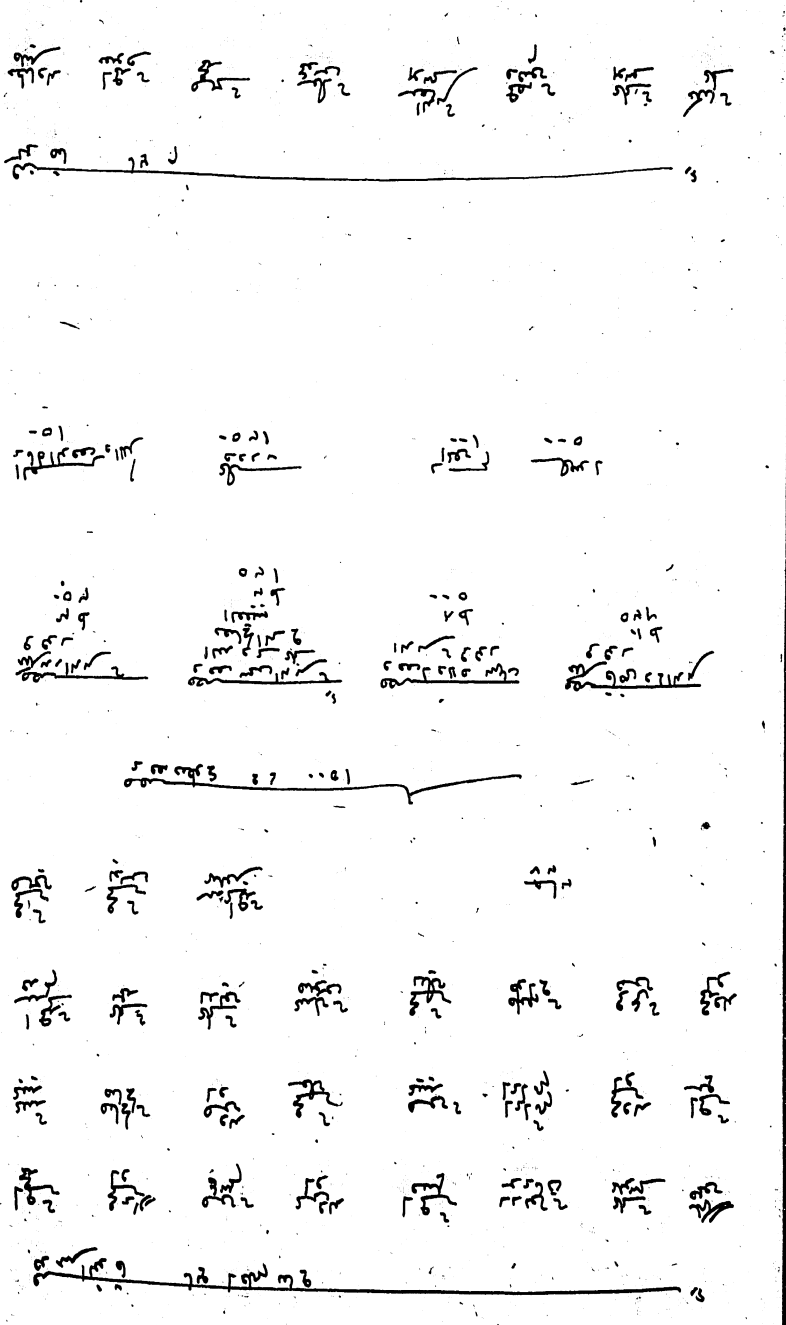

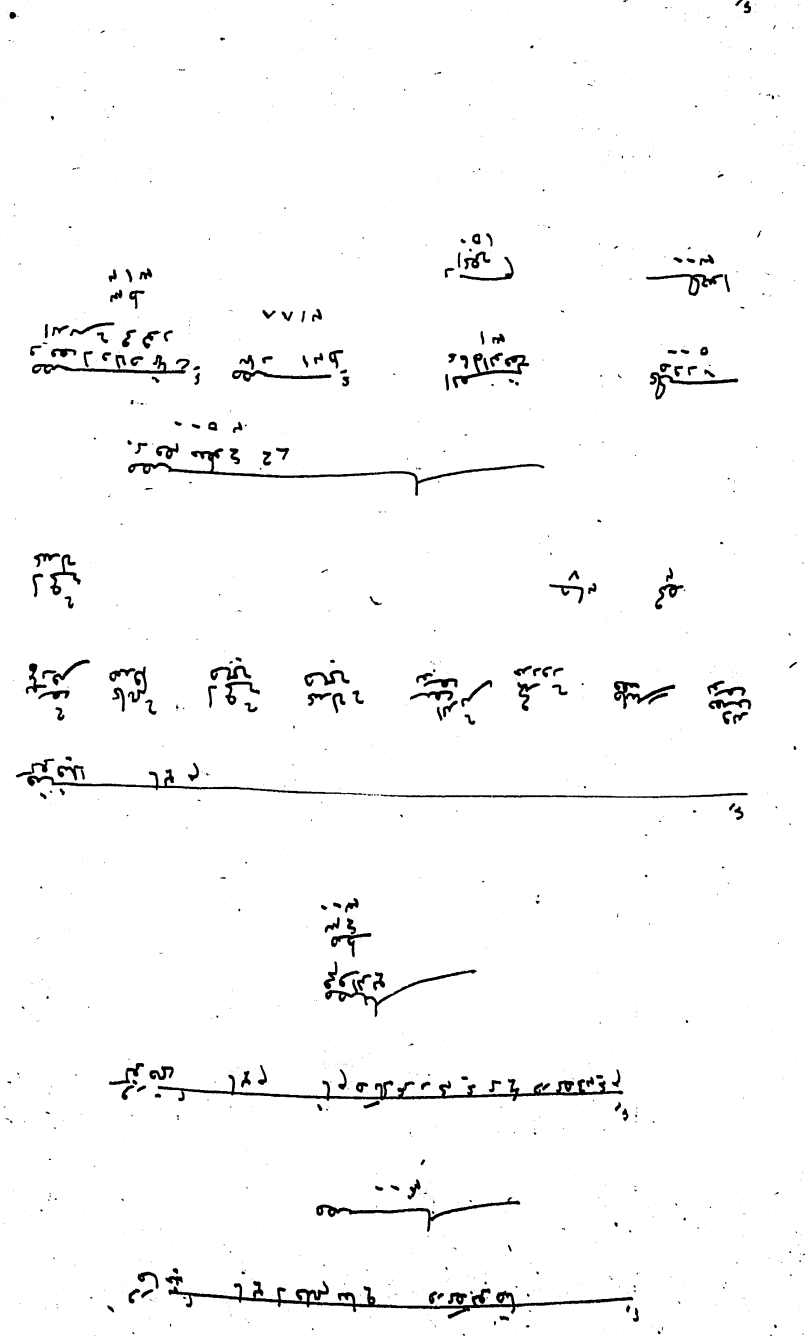

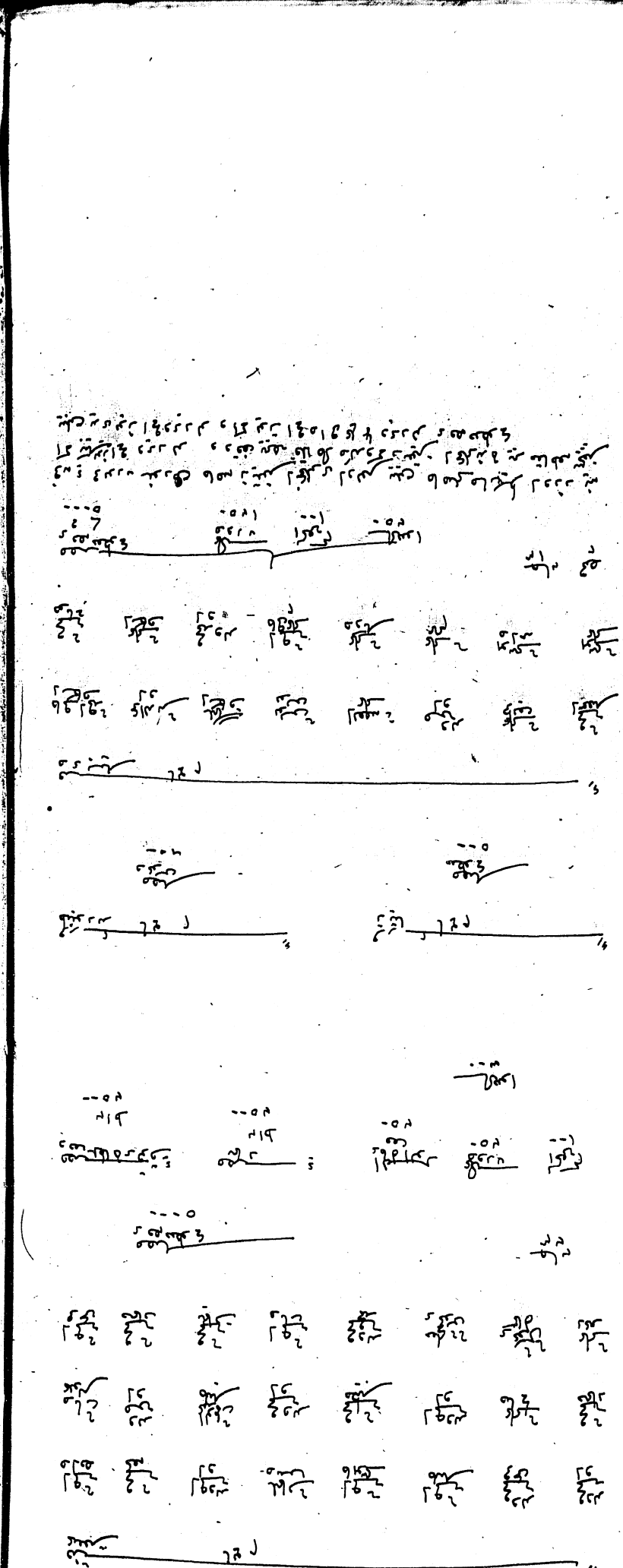

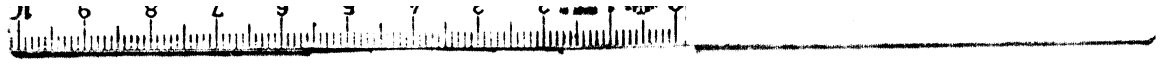

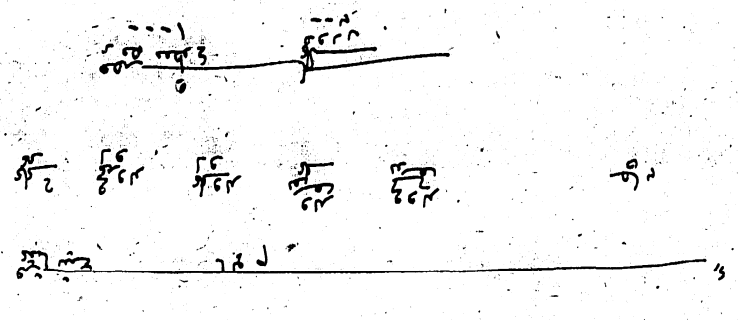

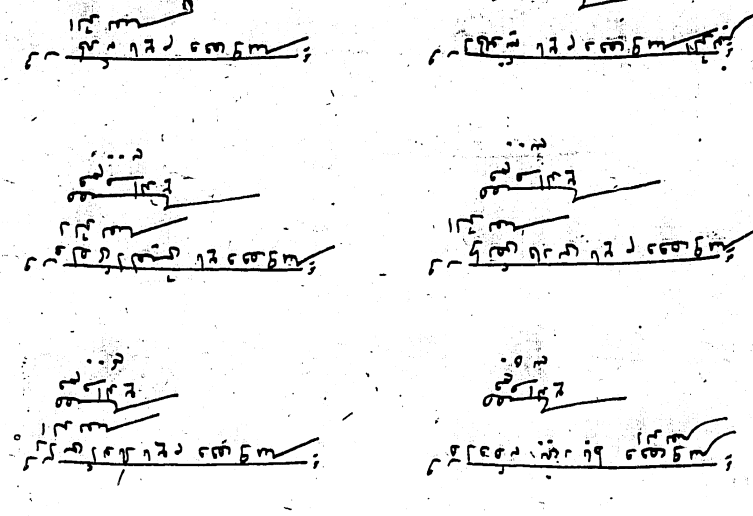

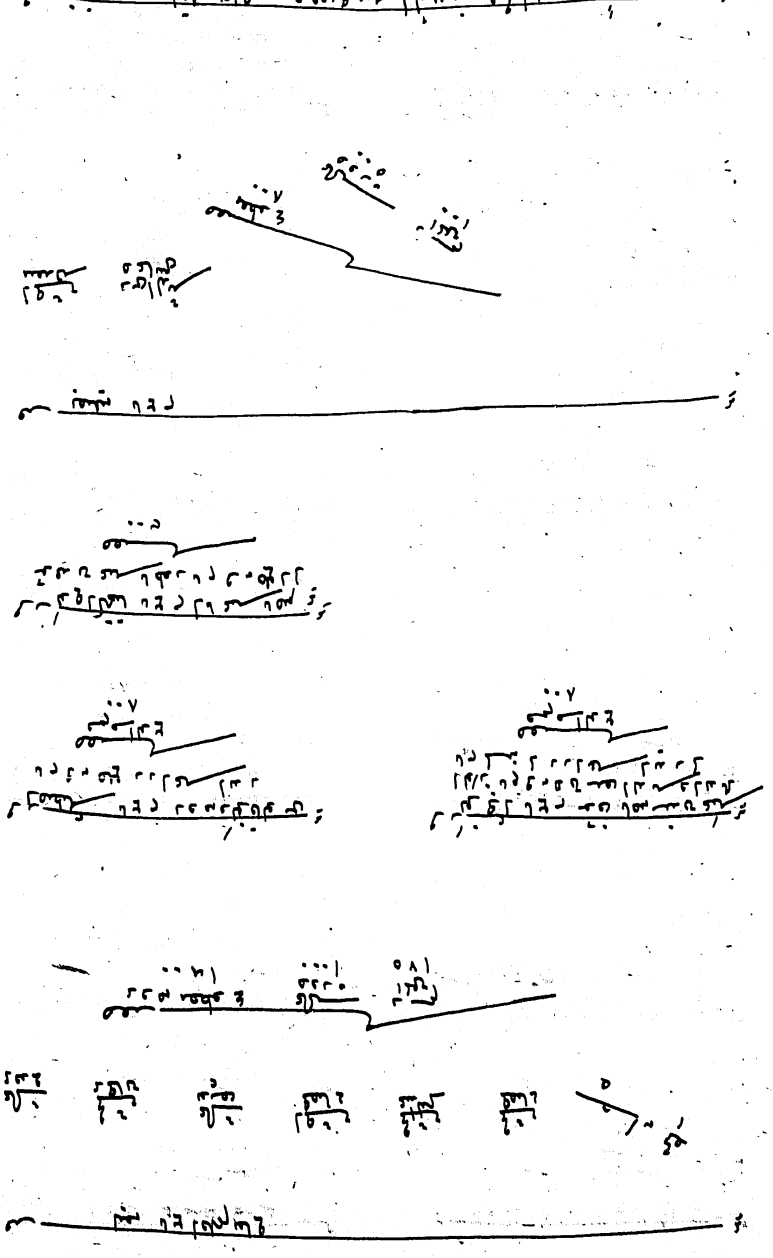

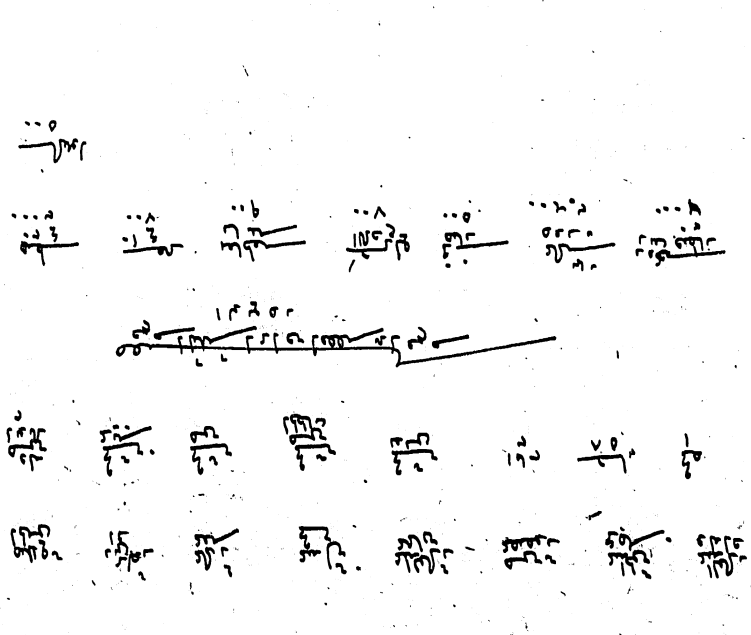

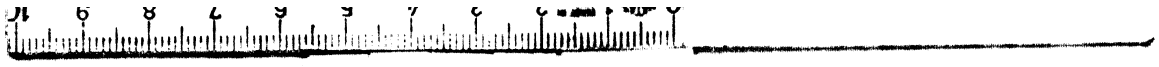

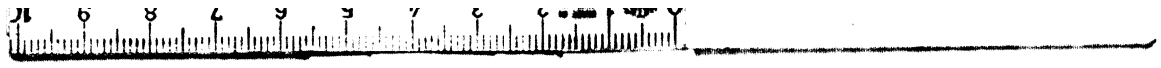

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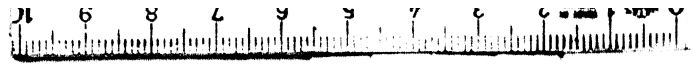

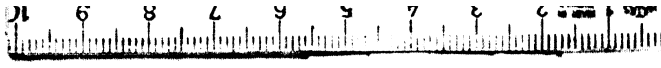

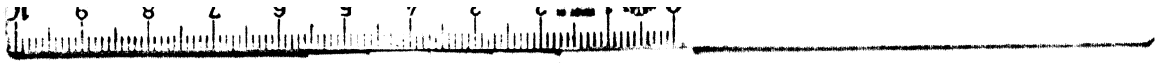

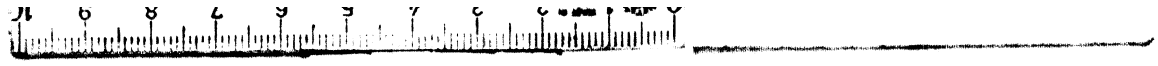

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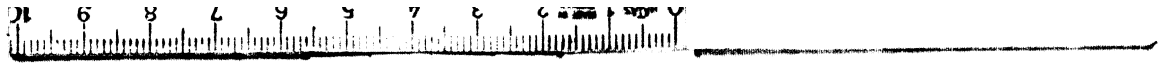
٦٧٨

ا صنوبر ۲ پایه سالم ۵۰۰ عدد

۱۰۰ عدد ۲ پایه سالم صنوبر



د ـــــ ټاټوبۍ ۴ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۴	د	ـــــ	ټاټوبۍ	۴	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۱۲۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۳ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۳	د	ـــــ	ټاټوبۍ	۳	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۹۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۲ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۲	د	ـــــ	ټاټوبۍ	۲	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۶۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۱ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۱	د	ـــــ	ټاټوبۍ	۱	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۳۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۴ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۴	د	ـــــ	ټاټوبۍ	۴	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۱۲۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۳ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۳	د	ـــــ	ټاټوبۍ	۳	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۹۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۲ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۲	د	ـــــ	ټاټوبۍ	۲	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۶۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۱ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۱	د	ـــــ	ټاټوبۍ	۱	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۳۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۴ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۴	د	ـــــ	ټاټوبۍ	۴	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۱۲۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۳ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۳	د	ـــــ	ټاټوبۍ	۳	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۹۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۲ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۲	د	ـــــ	ټاټوبۍ	۲	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۶۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۱ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۱	د	ـــــ	ټاټوبۍ	۱	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۳۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۴ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۴	د	ـــــ	ټاټوبۍ	۴	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۱۲۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۳ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۳	د	ـــــ	ټاټوبۍ	۳	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۹۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۲ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۲	د	ـــــ	ټاټوبۍ	۲	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۶۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۱ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۱	د	ـــــ	ټاټوبۍ	۱	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۳۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۴ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۴	د	ـــــ	ټاټوبۍ	۴	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۱۲۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۳ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۳	د	ـــــ	ټاټوبۍ	۳	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۹۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۲ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۲	د	ـــــ	ټاټوبۍ	۲	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۶۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۱ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۱	د	ـــــ	ټاټوبۍ	۱	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۳۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۴ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۴	د	ـــــ	ټاټوبۍ	۴	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۱۲۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۳ ډزې لرونکی

۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۳	د	ـــــ	ټاټوبۍ	۳	ډزې	لرونکی	د	ـــــ

مقدار ـــــ ۹۰۰ ـــــ ټوله

د ـــــ ټاټوبۍ ۲ ډزې لرونکی

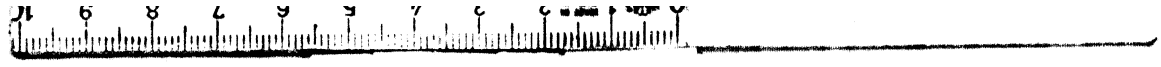
۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۲	د	ـــــ	ټاټوبۍ	۲	ډزې	لرونکی	د	ـــــ

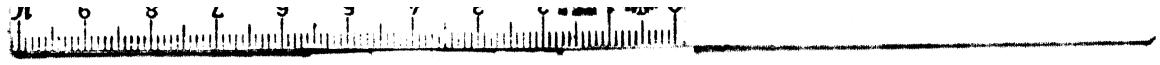
مقدار ـــــ ۶۰۰ ـــــ ټوله

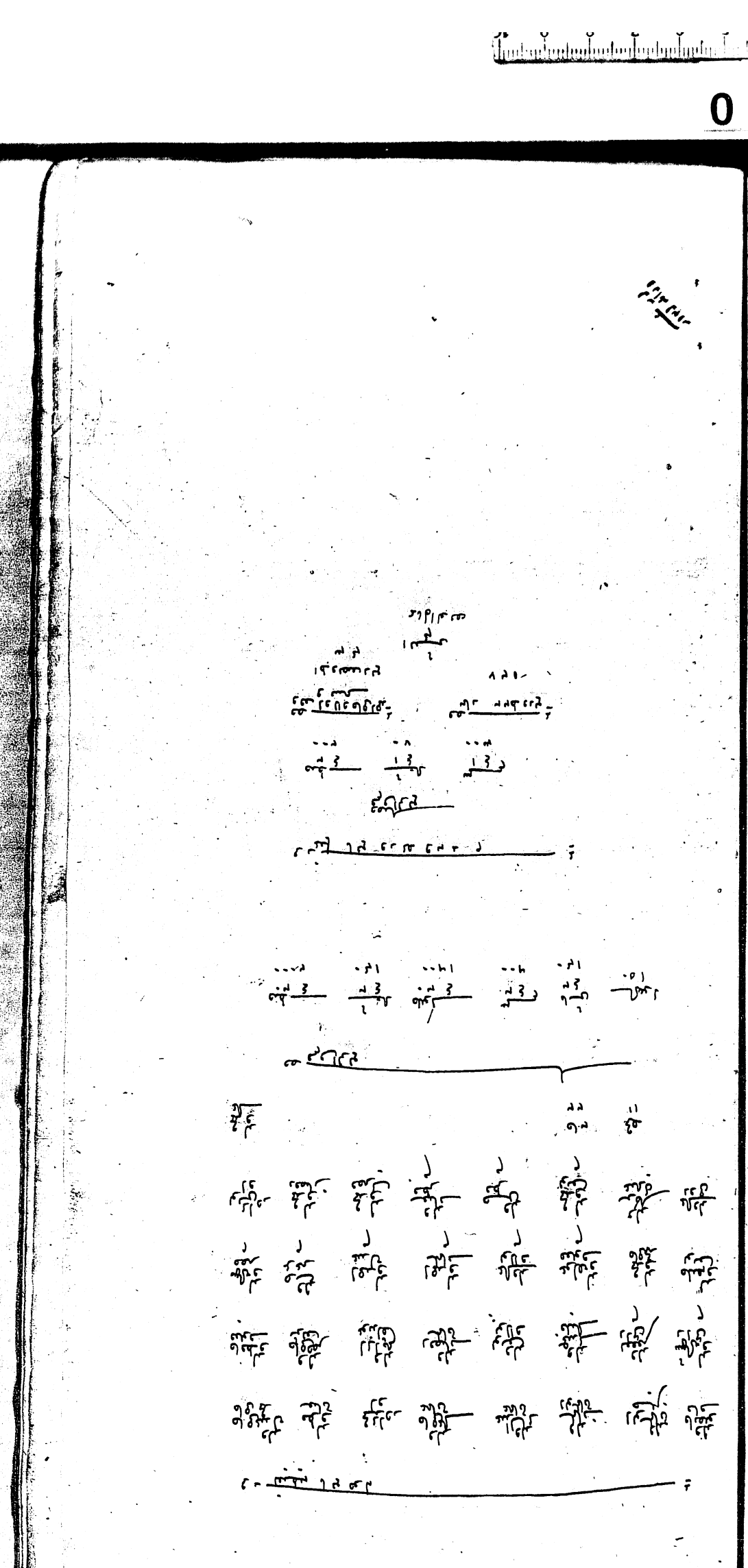
د ـــــ ټاټوبۍ ۱ ډزې لرونکی

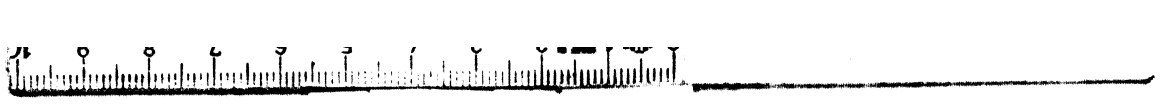
۱۲	۱۱	۱۰	۹	۸	۷	۶	۵	۴	۳	۲	۱
ټاټوبۍ	ډزې	لرونکی	۱	د	ـــــ	ټاټوبۍ	۱	ډزې	لرونکی	د	ـــــ

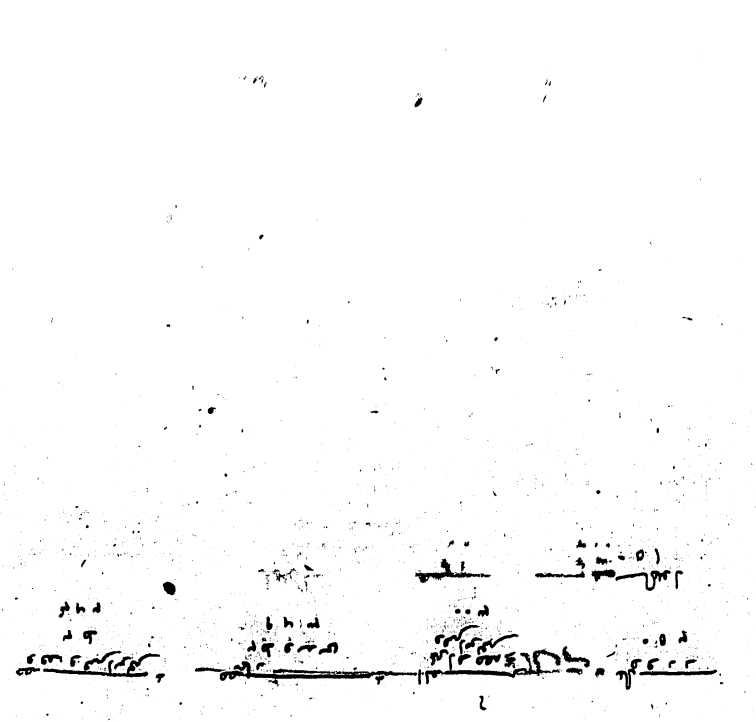
مقدار ـــــ ۳۰۰ ـــــ ټوله

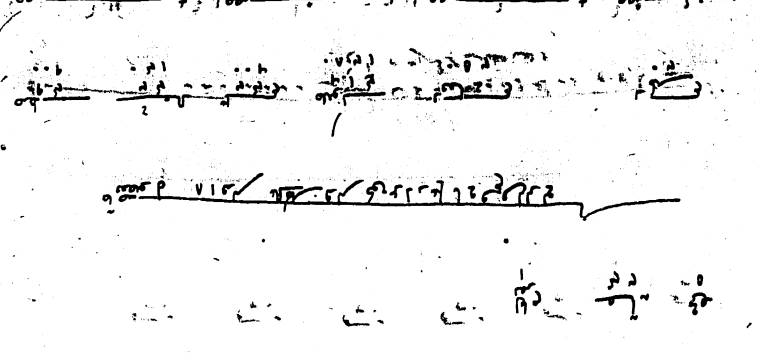


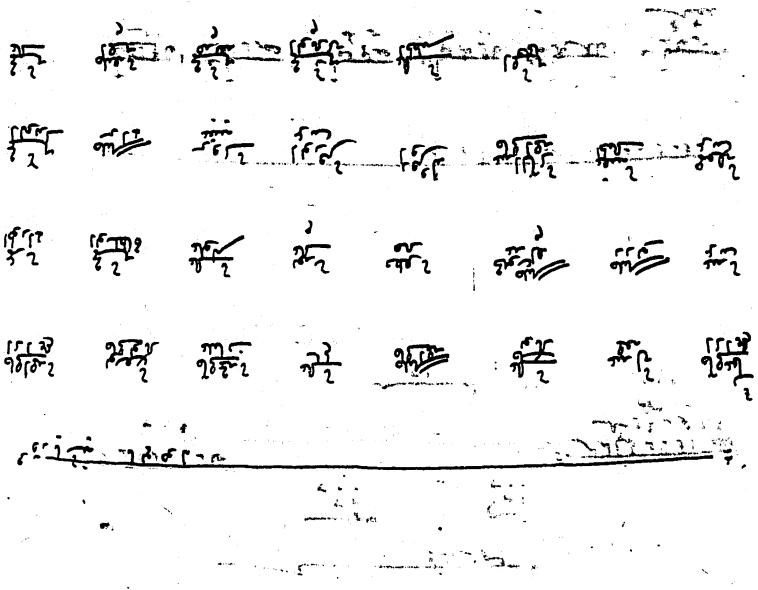


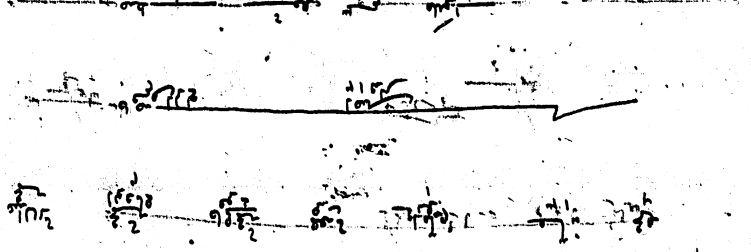


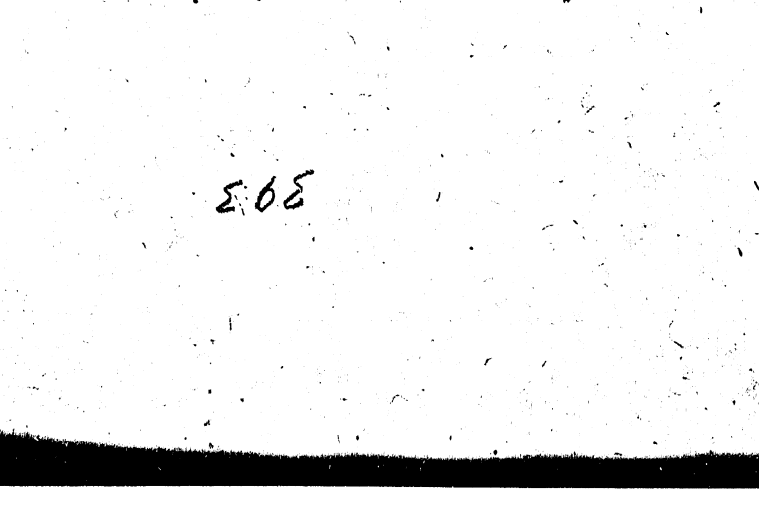


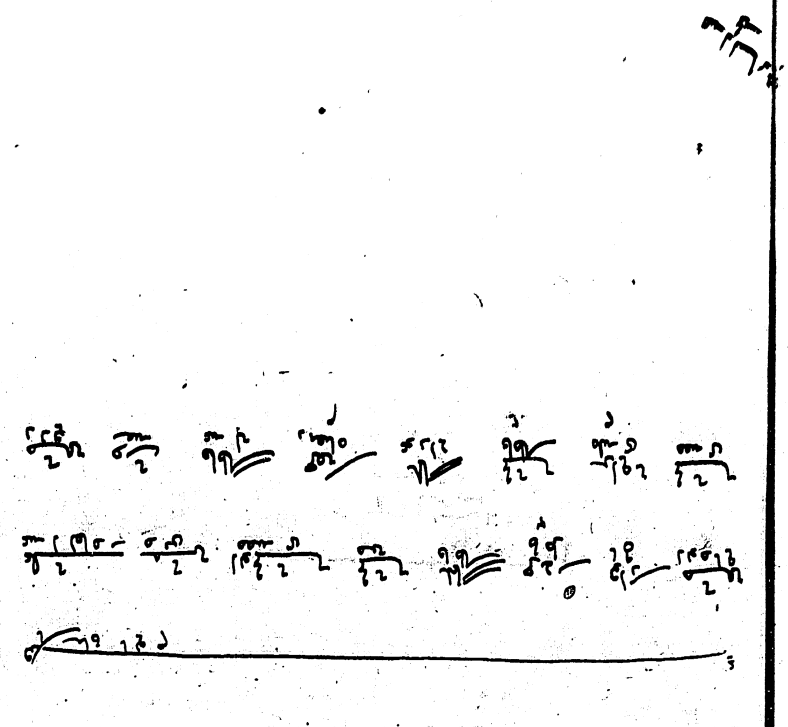


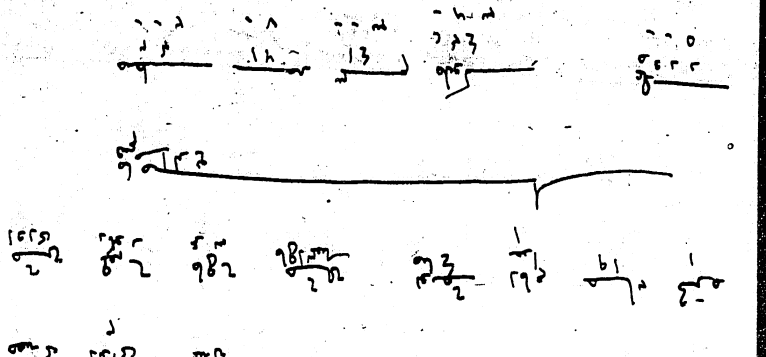


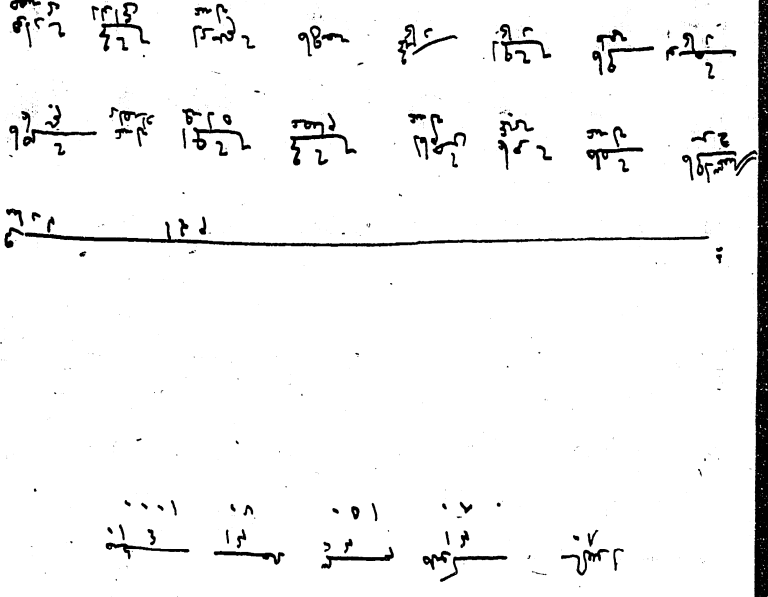


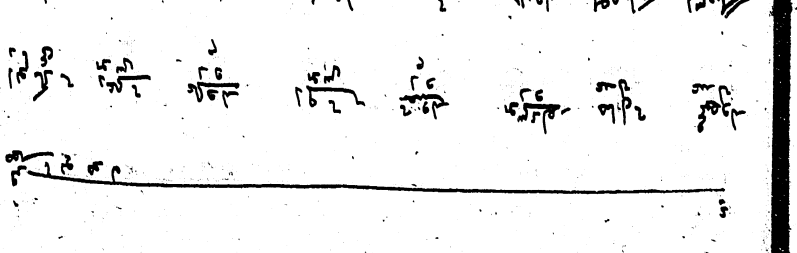


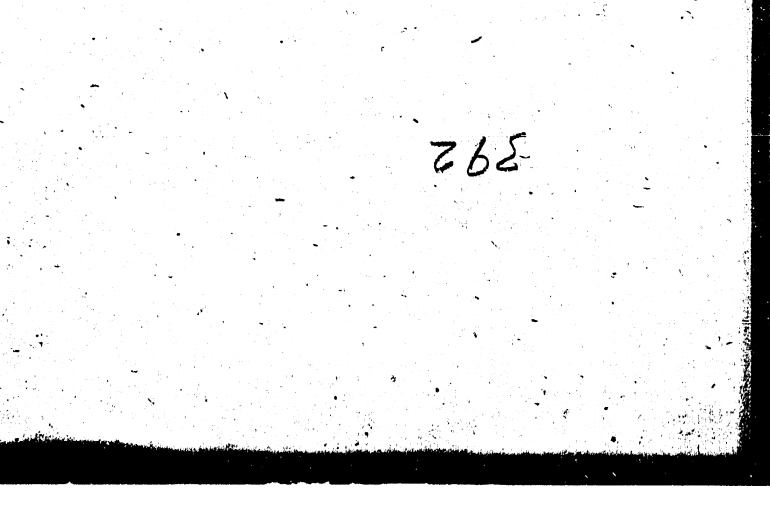


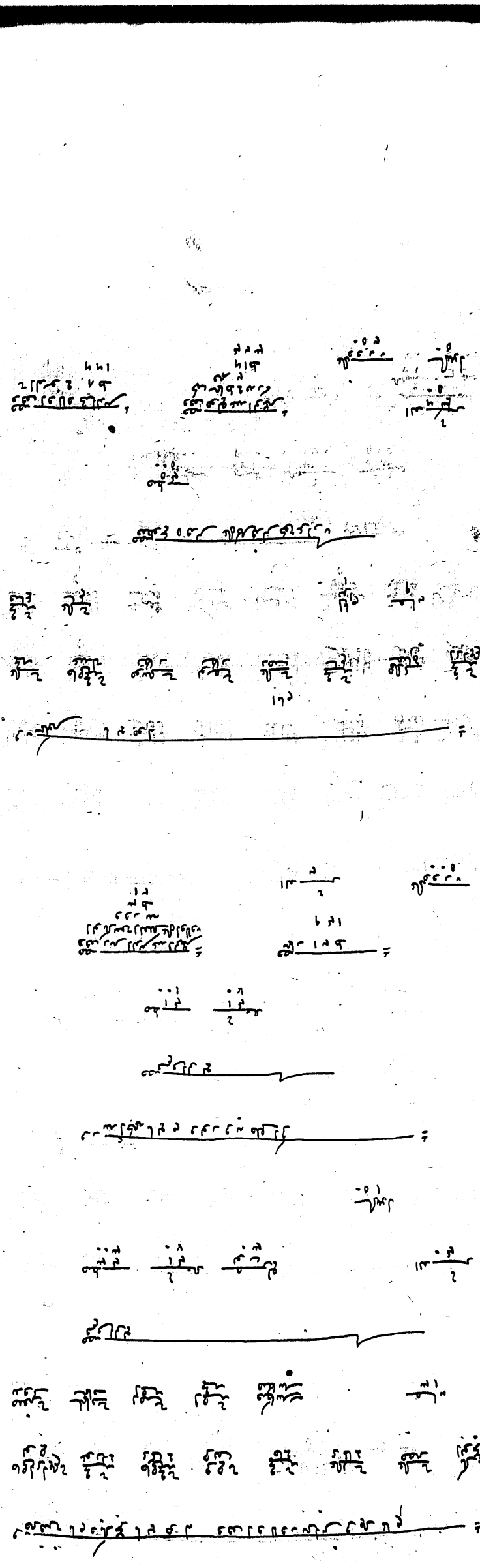


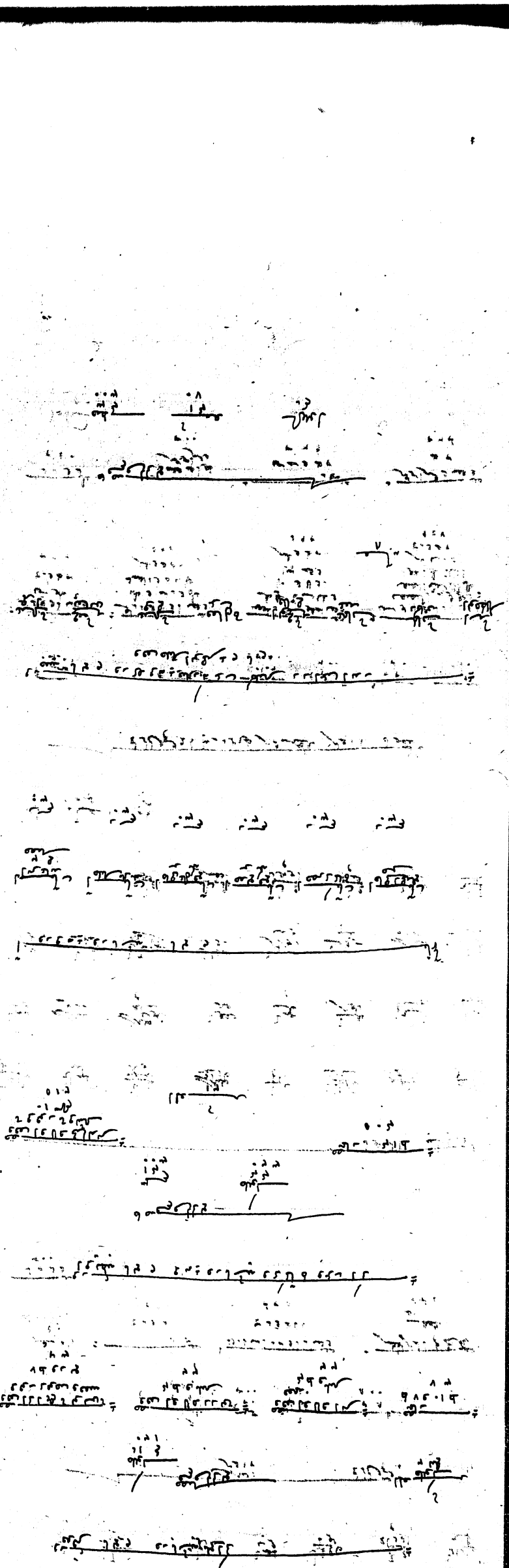


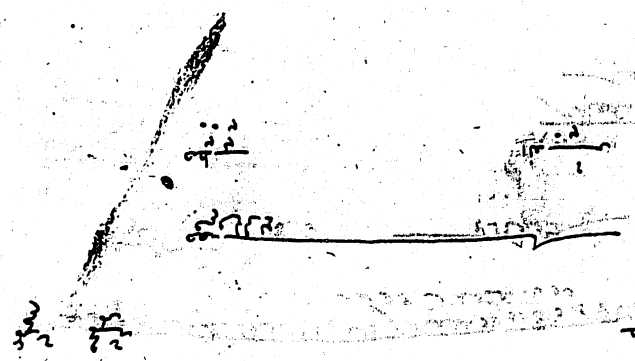


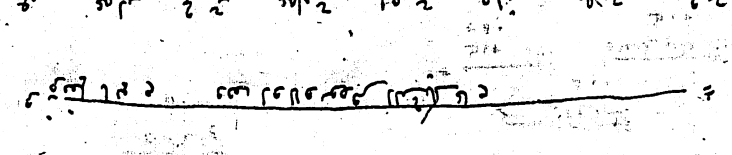


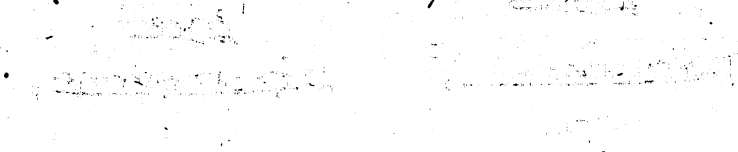


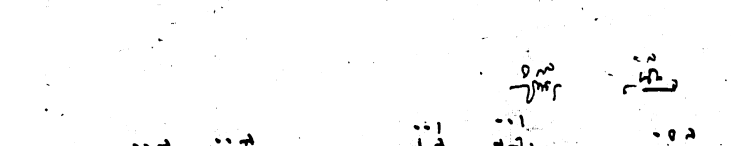


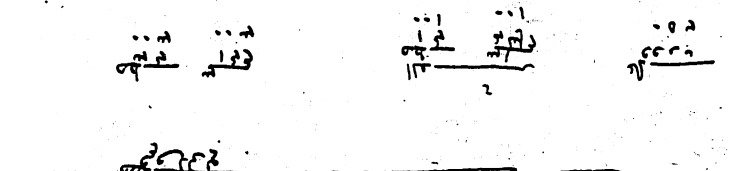


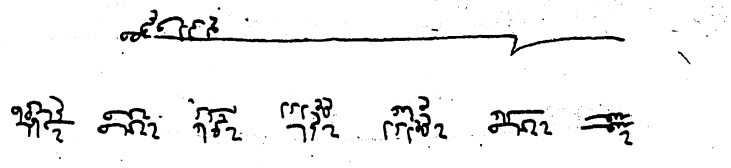


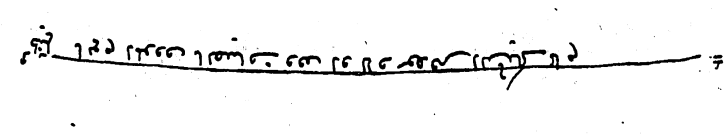


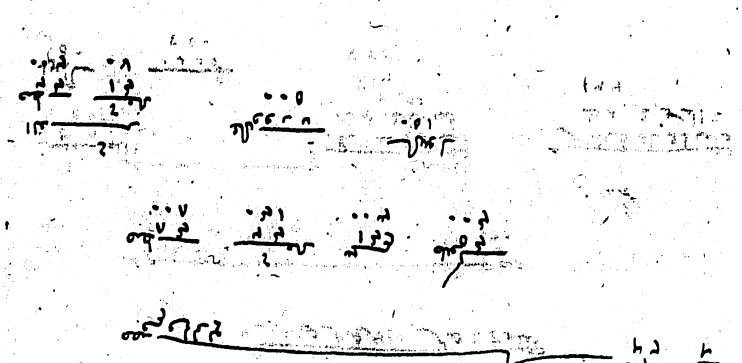


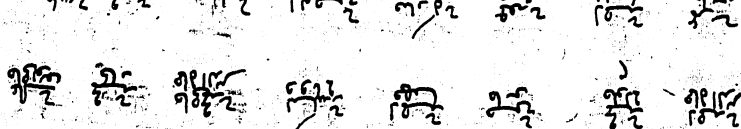


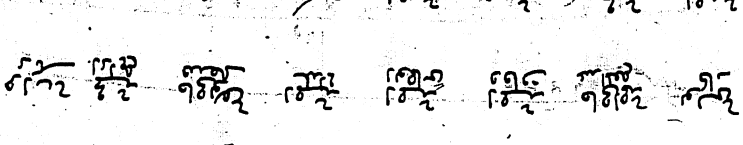


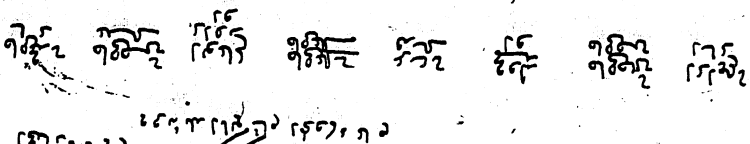


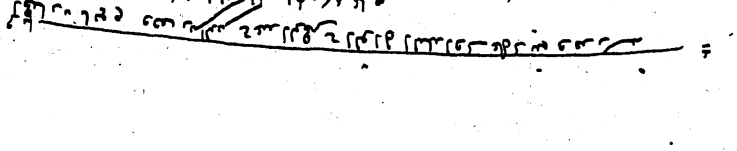


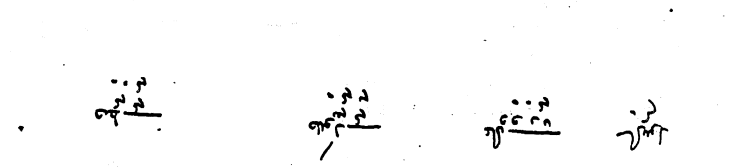


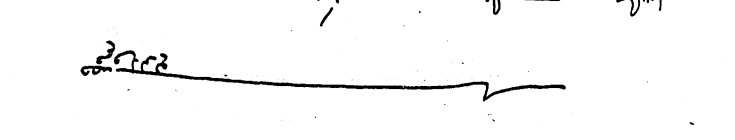


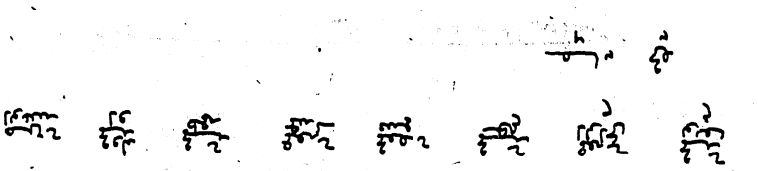


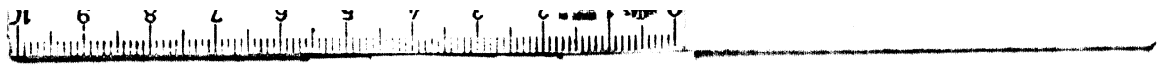


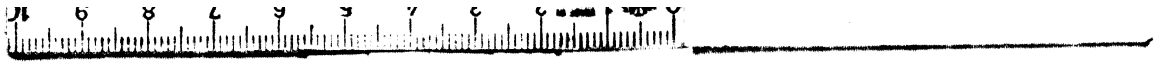












ئەندازیارانی ڕاوێژکار و بەڕێوەبەرانی ناوچەکان لە بەڕێوەبەرایەتی گشتی ئاو و ڕێوڕەسمی ئاوەڕۆ

ڕاپۆرتی مانگانەی ئەندازیارانی ڕاوێژکار و بەڕێوەبەرانی ناوچەکان لە بەڕێوەبەرایەتی گشتی ئاو و ڕێوڕەسمی ئاوەڕۆ

ناوی ئەندازیار ..... ناوچە ..... مانگ ..... ساڵ .....

ژمارە	ناوی پڕۆژە	شوێن	جۆری کار	بڕی تەواوکراو	یەکە	ڕێژەی تەواوبوون	تێبینی
١							
٢							
٣							
٤							
٥							

کۆی گشتی ڕۆژانی کار ..... ڕۆژ

ئەندازیاری ناوچە

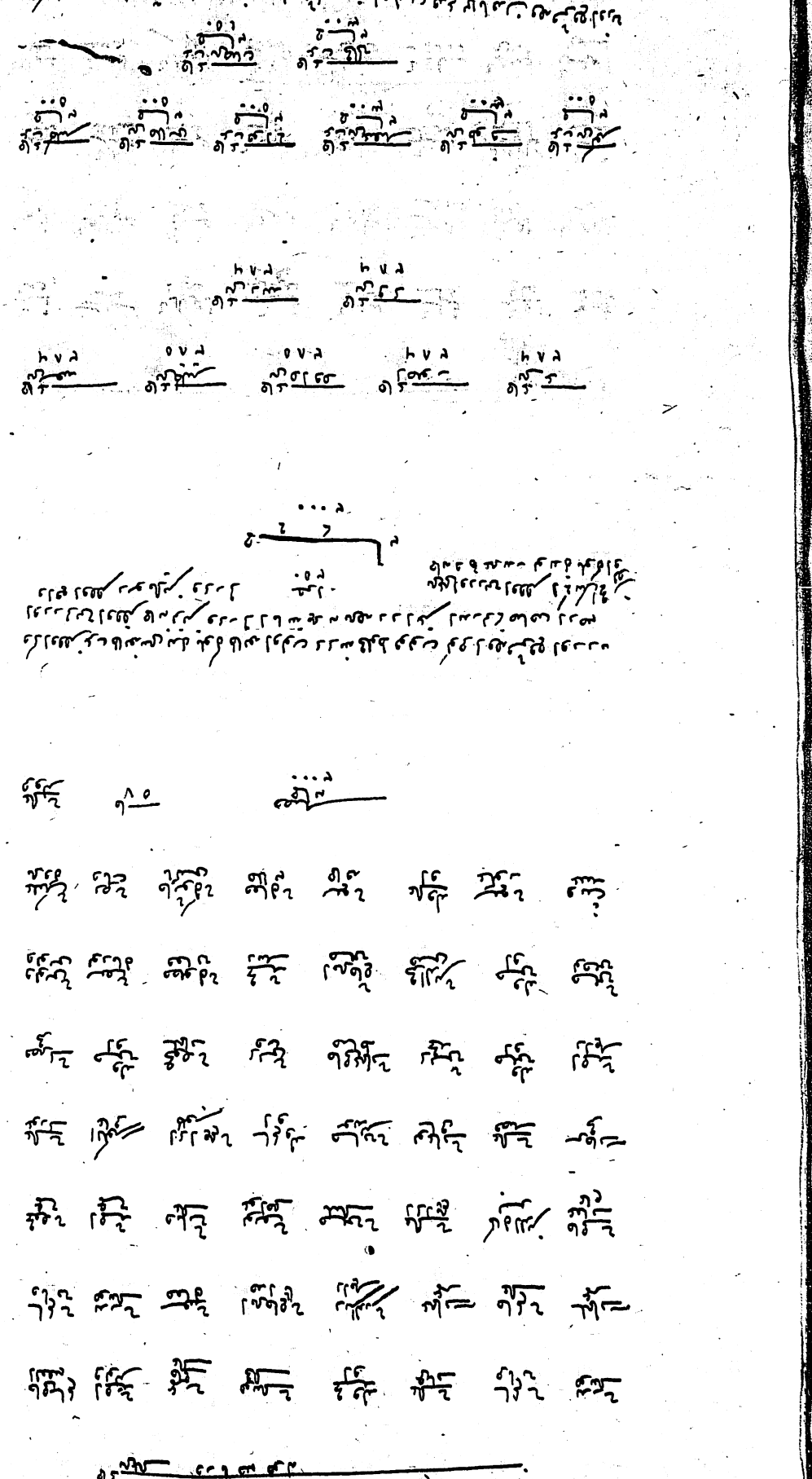
ڕاپۆرتی مانگانەی ئەندازیارانی ڕاوێژکار و بەڕێوەبەرانی ناوچەکان لە بەڕێوەبەرایەتی گشتی ئاو و ڕێوڕەسمی ئاوەڕۆ

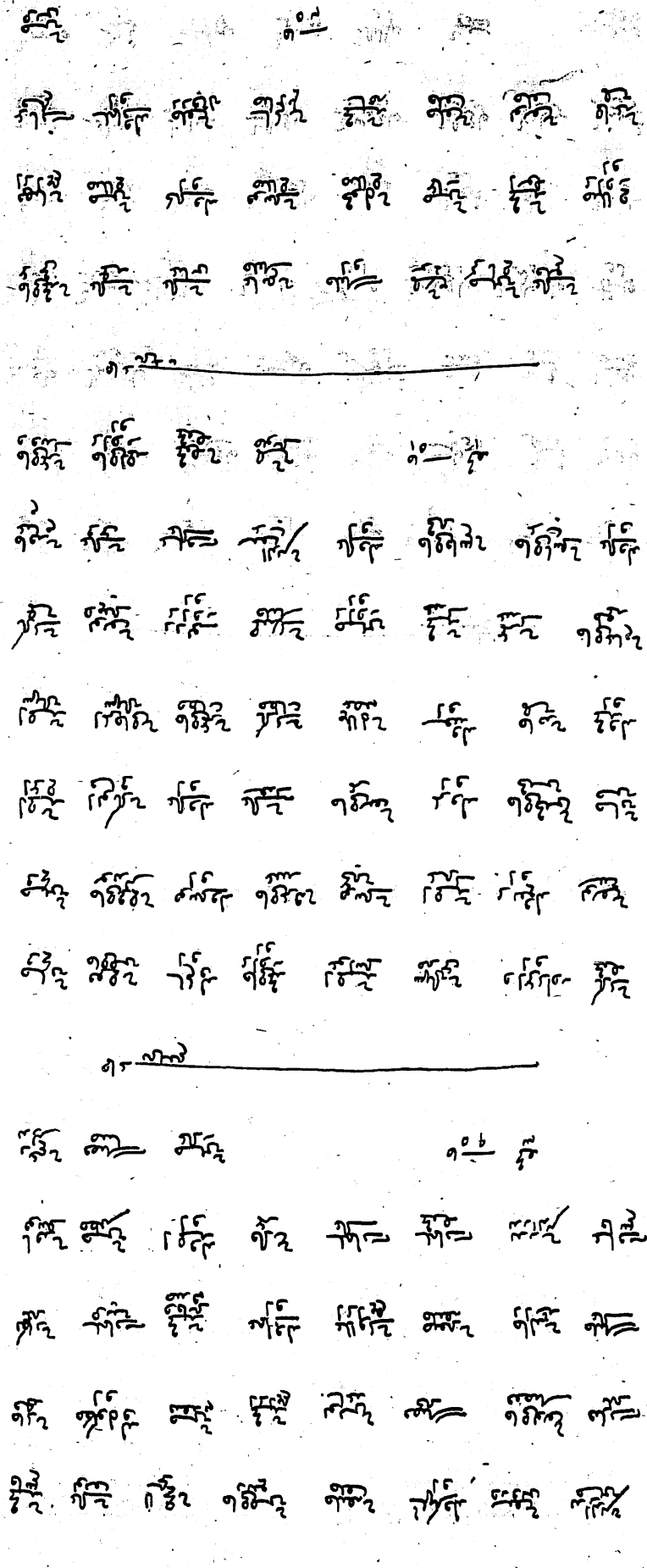
ناوی ئەندازیار ..... ناوچە ..... مانگ ..... ساڵ .....

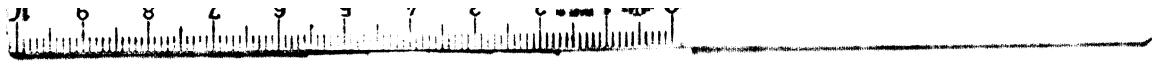
ژمارە	ناوی پڕۆژە	شوێن	جۆری کار	بڕی تەواوکراو	یەکە	ڕێژەی تەواوبوون	تێبینی
١							
٢							
٣							
٤							
٥							

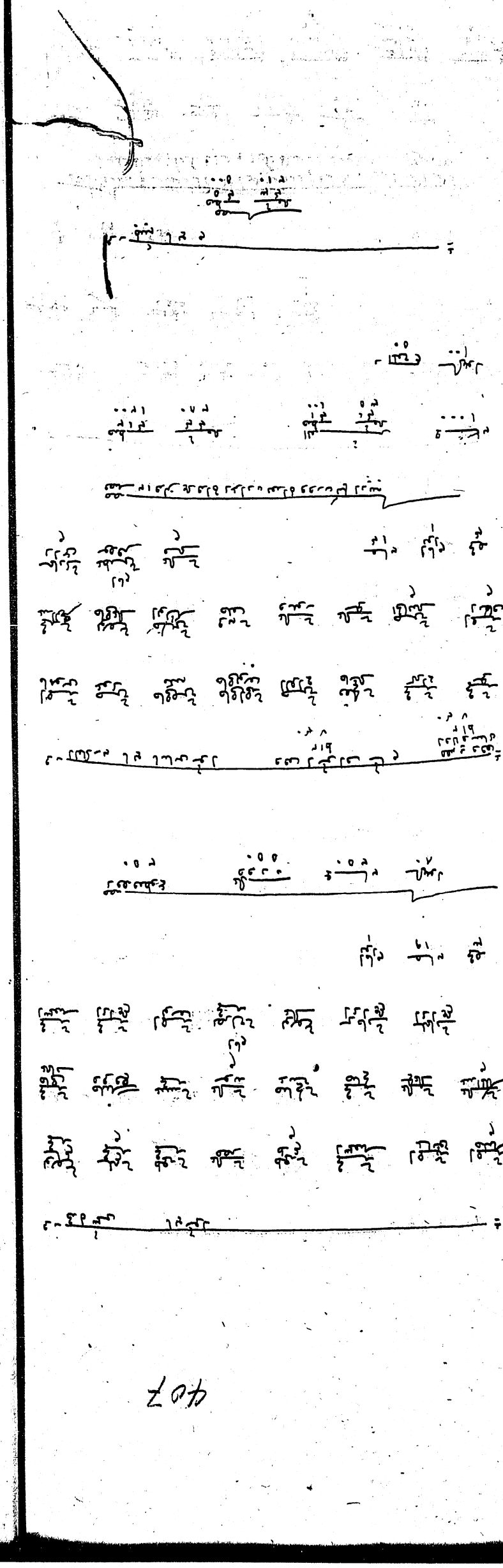
کۆی گشتی ڕۆژانی کار ..... ڕۆژ

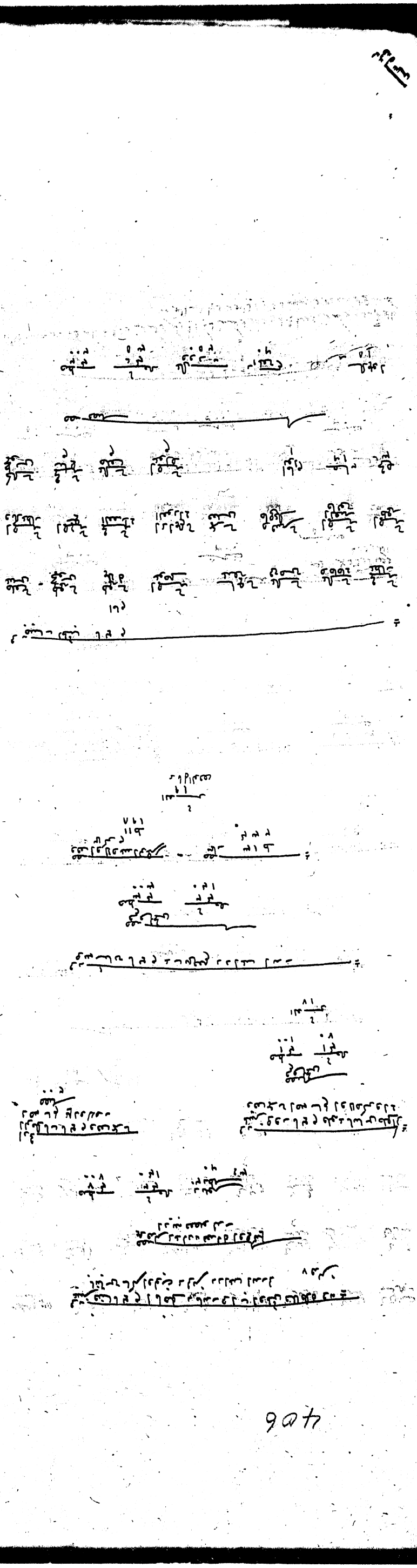
ئەندازیاری ناوچە

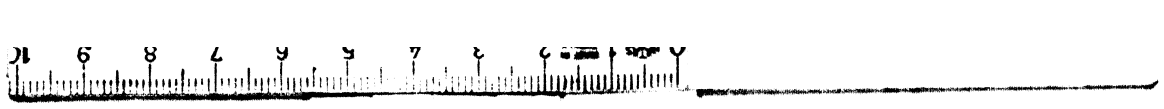


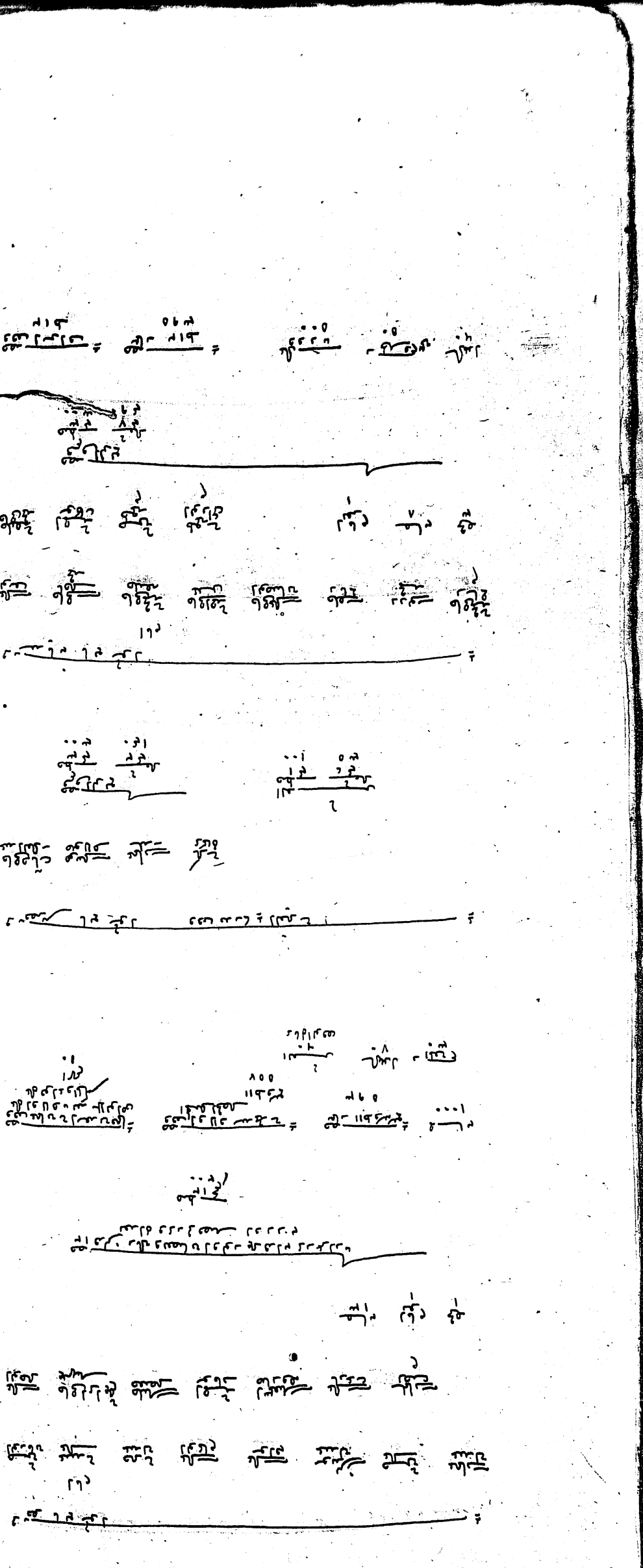


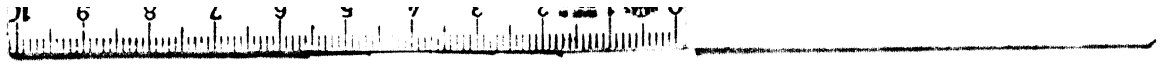


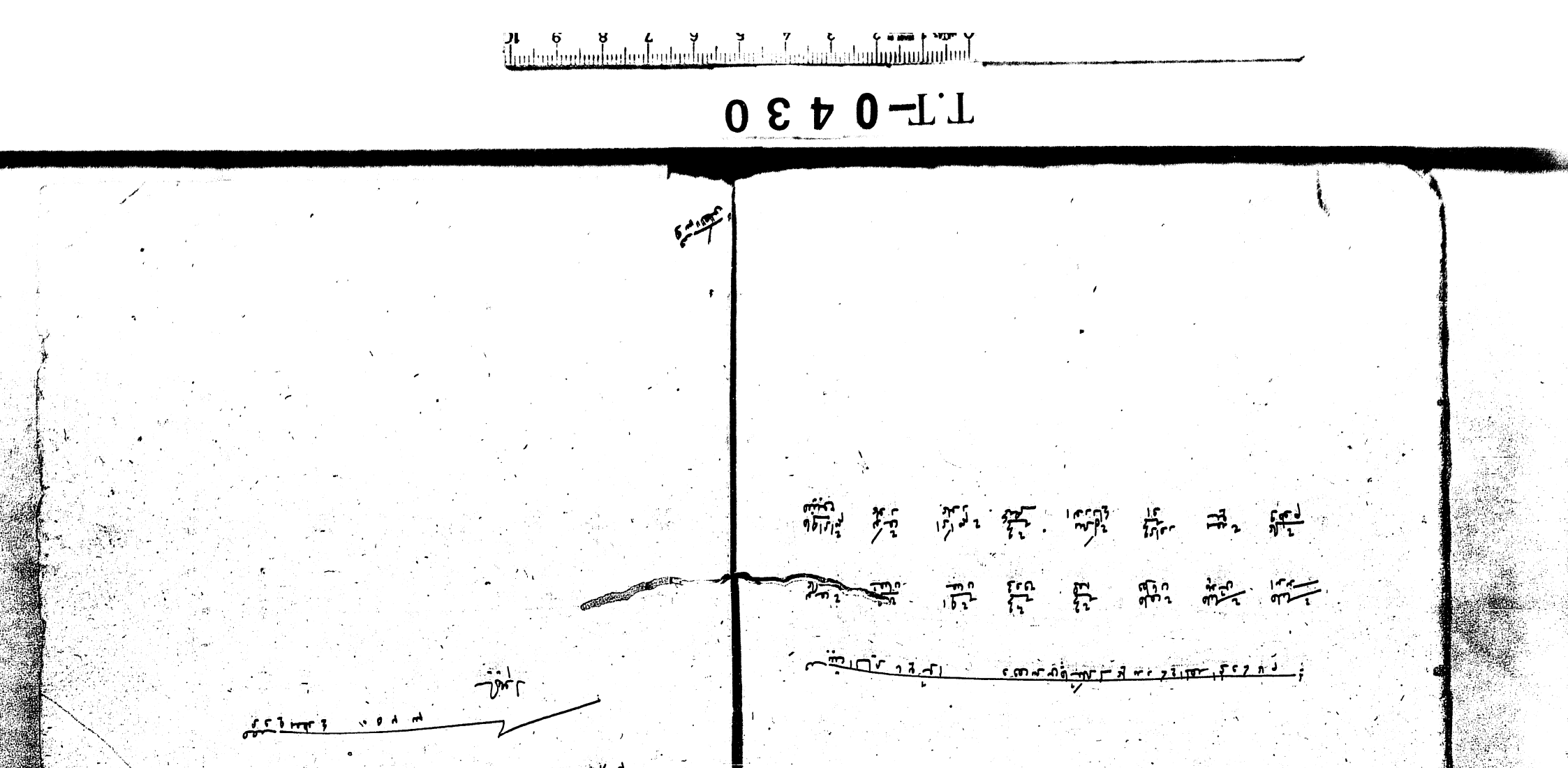












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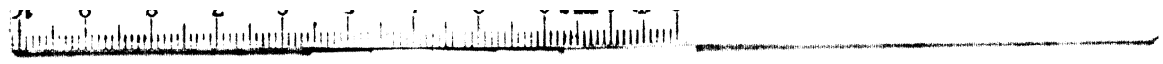

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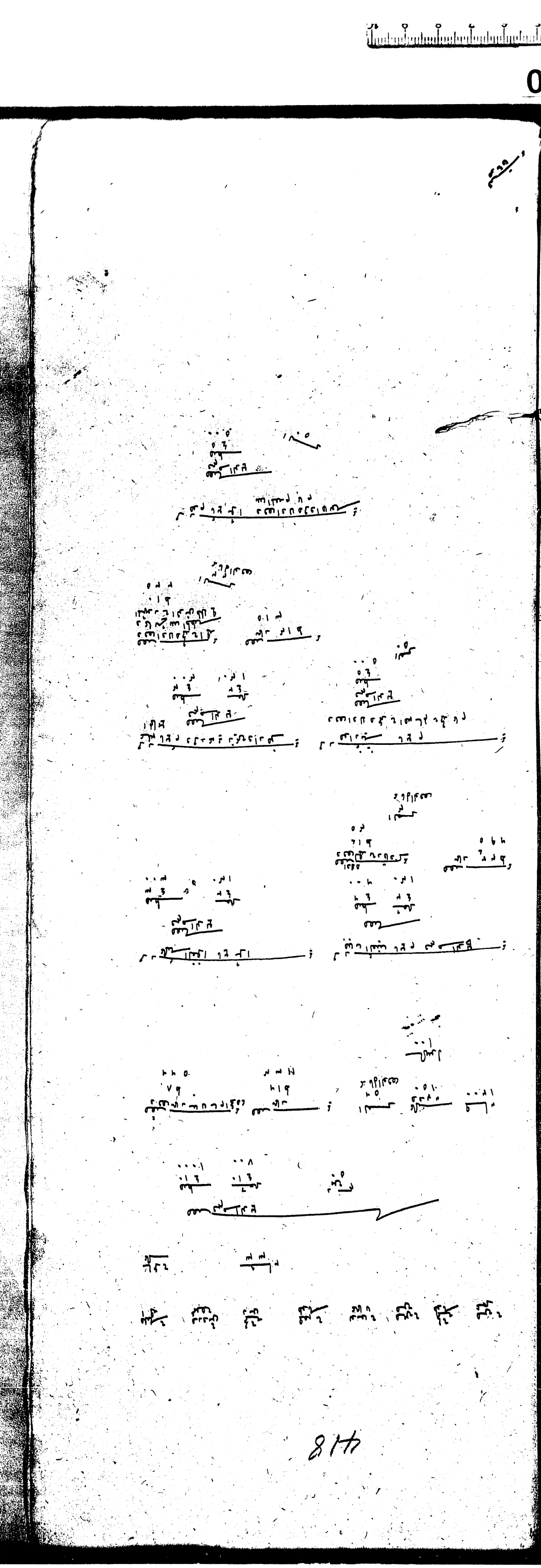

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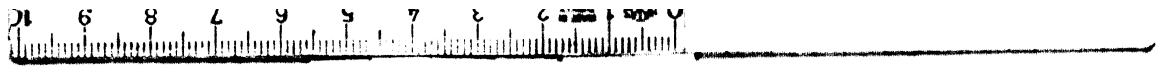

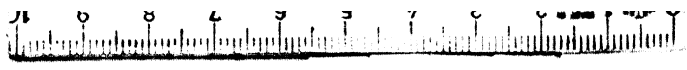

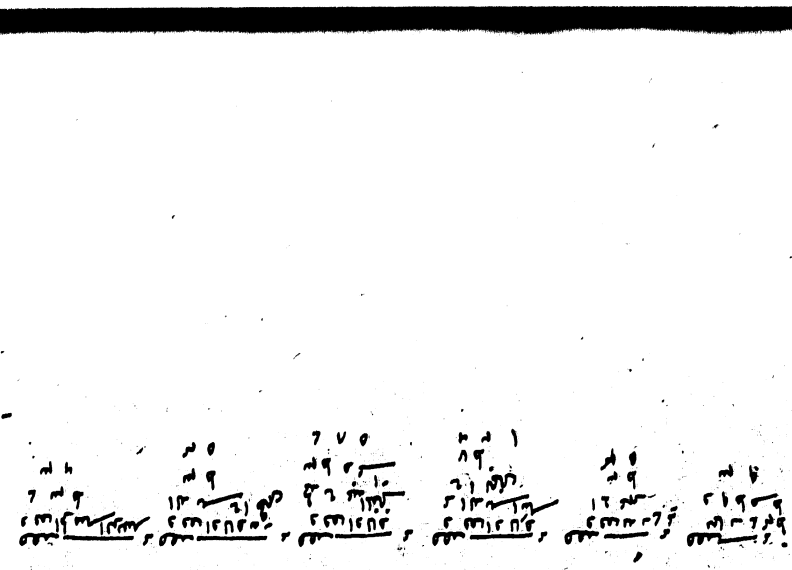

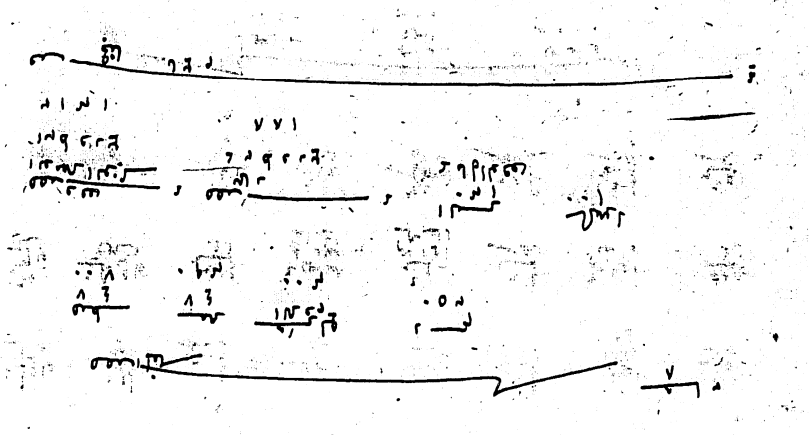

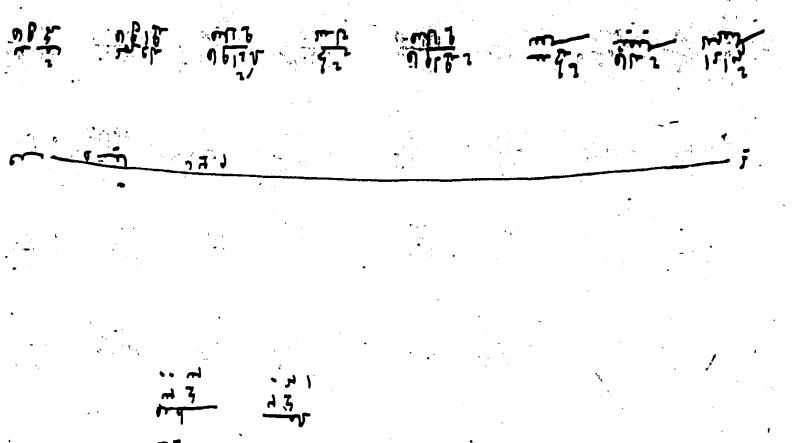

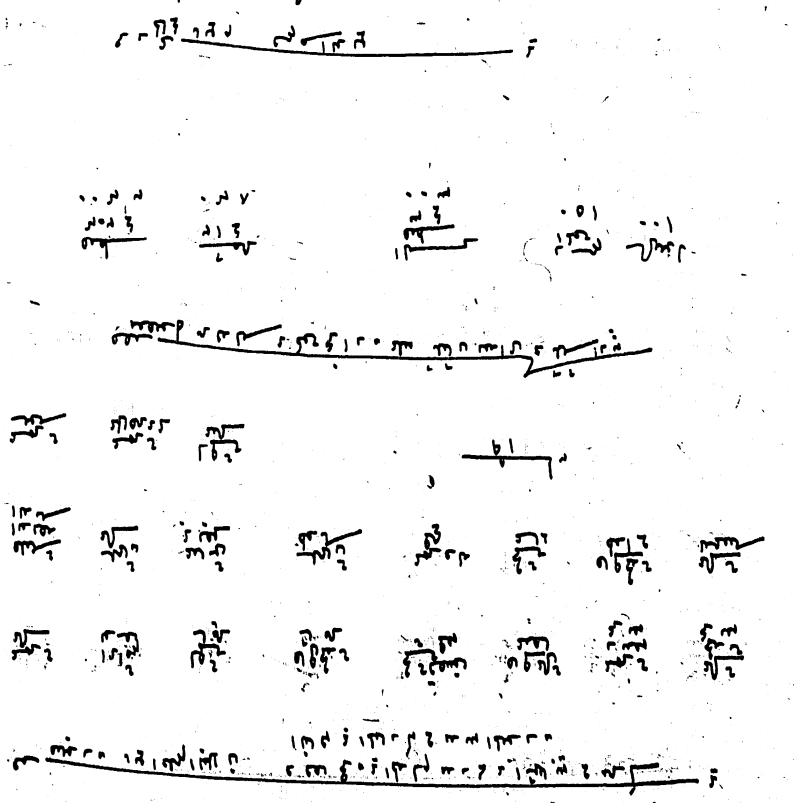

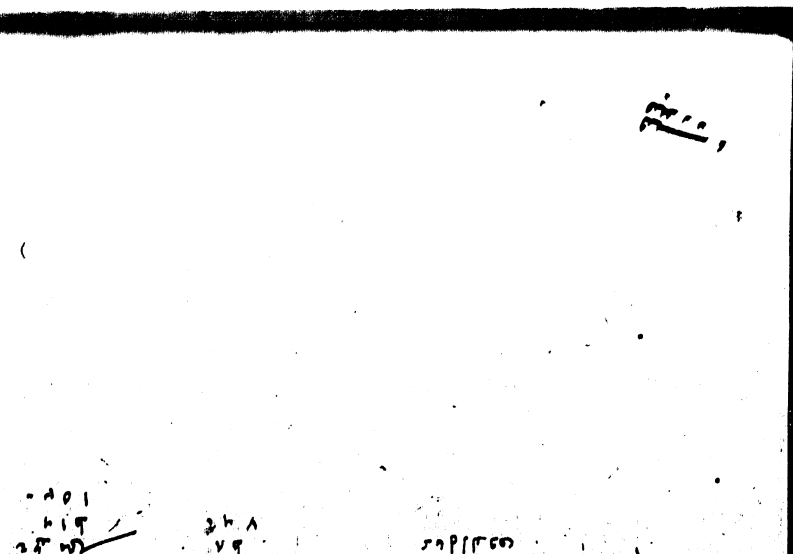

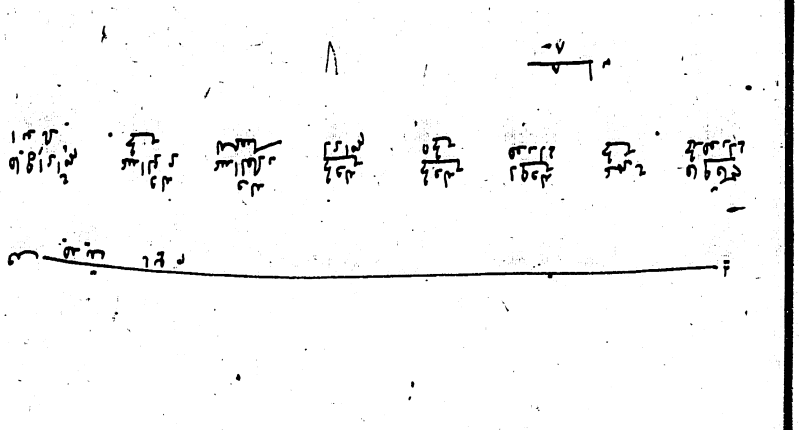

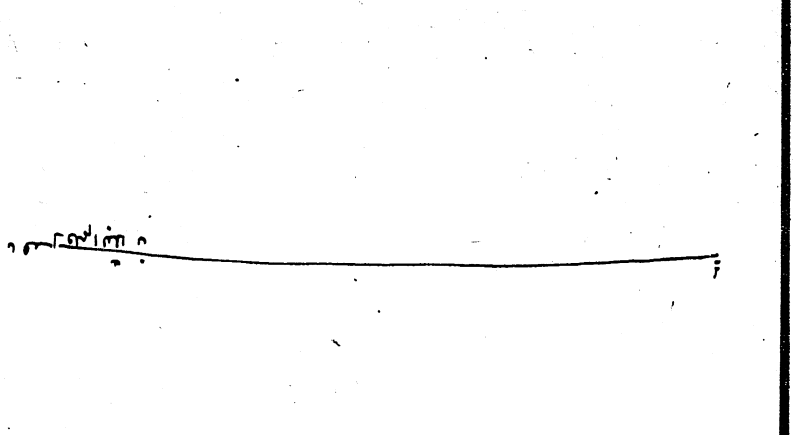

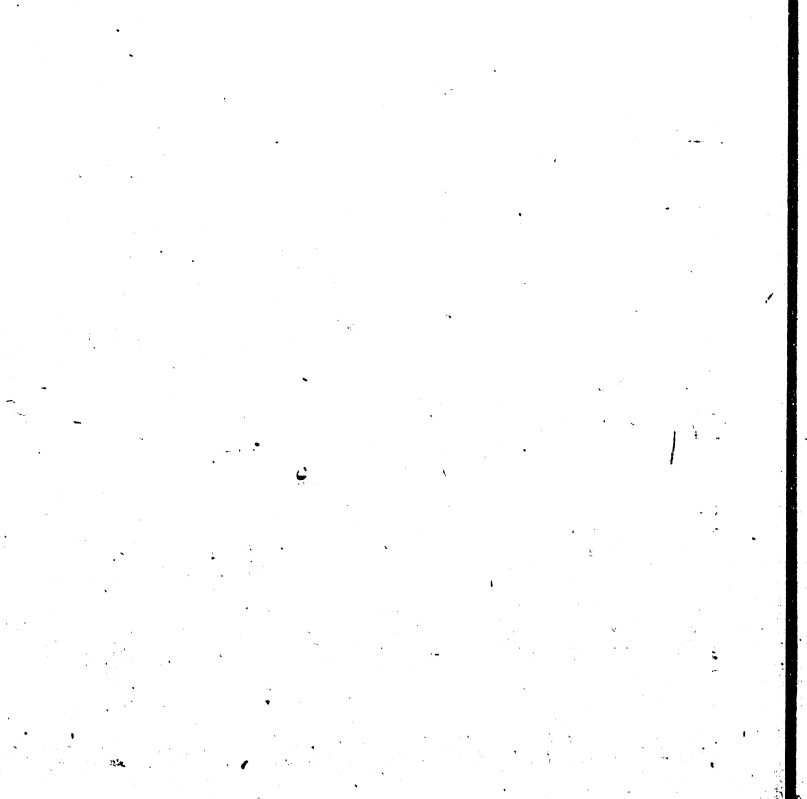

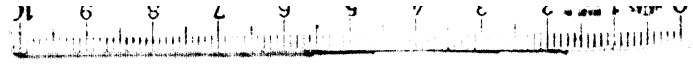

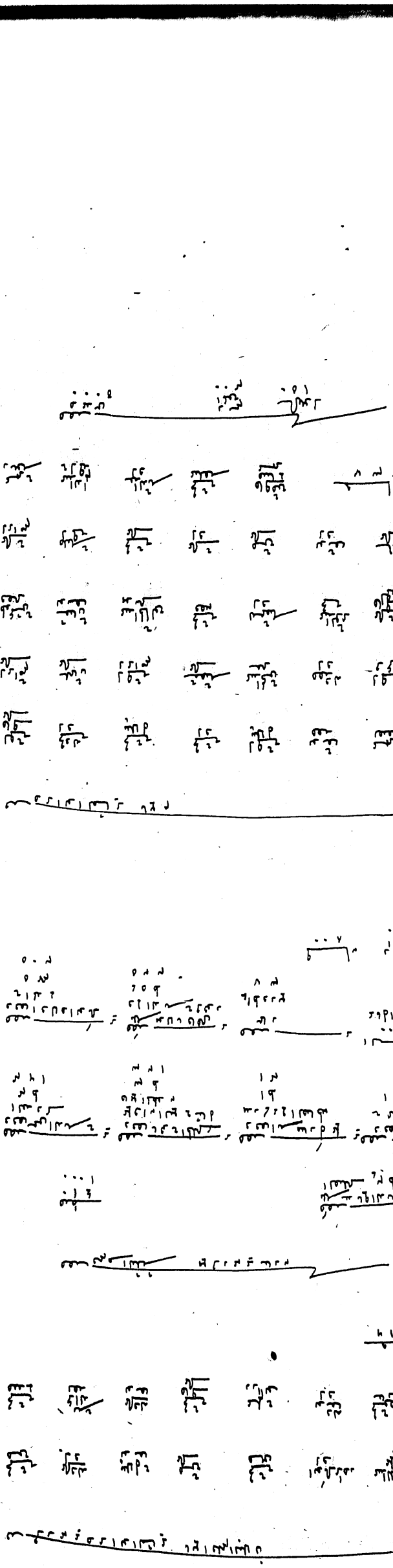

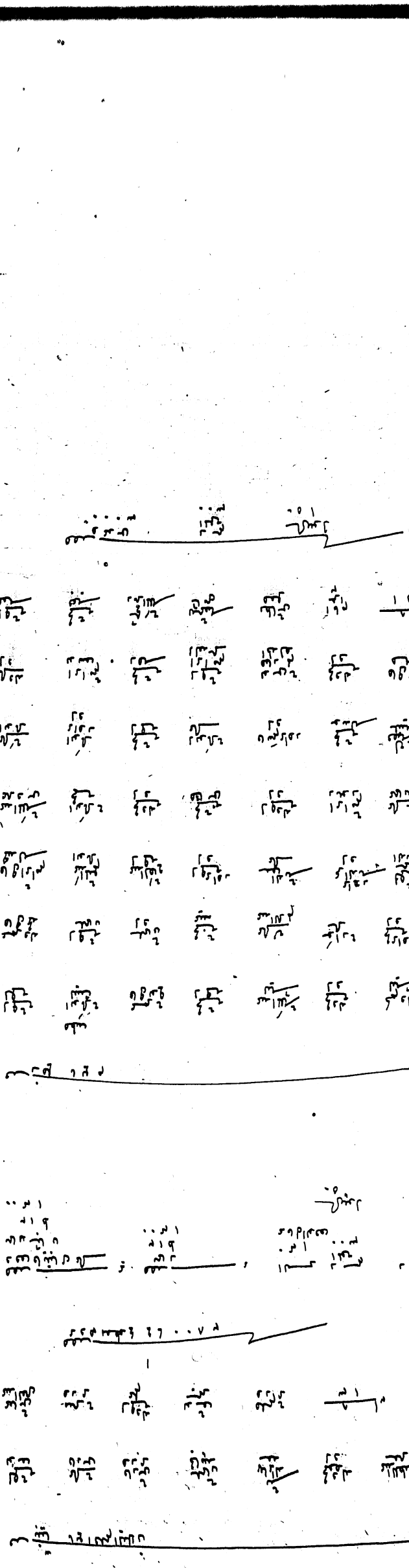

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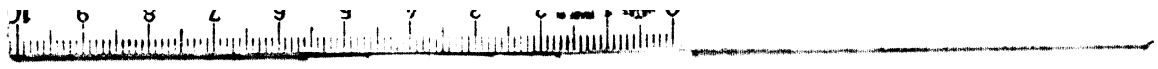

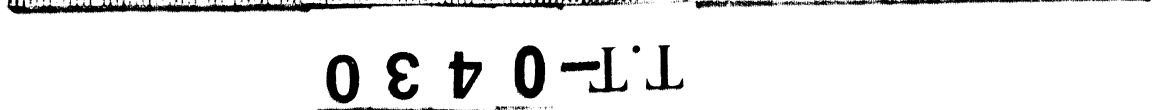

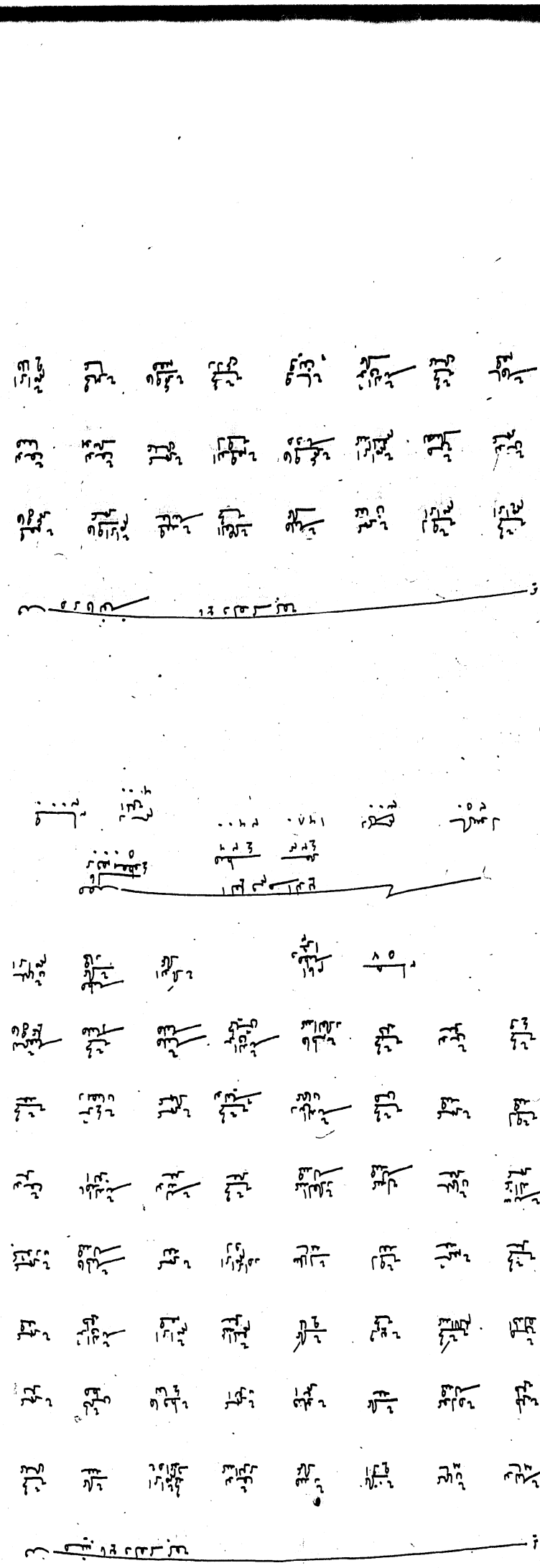

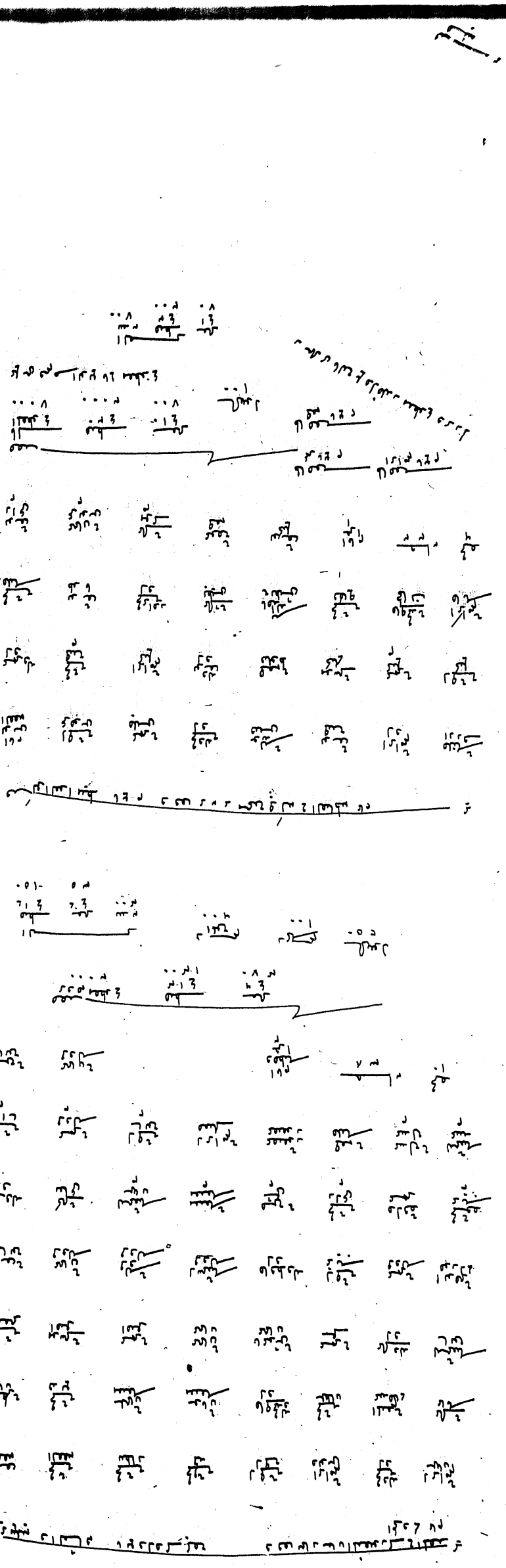

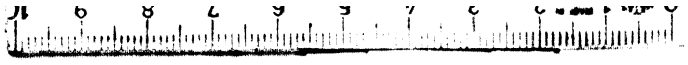

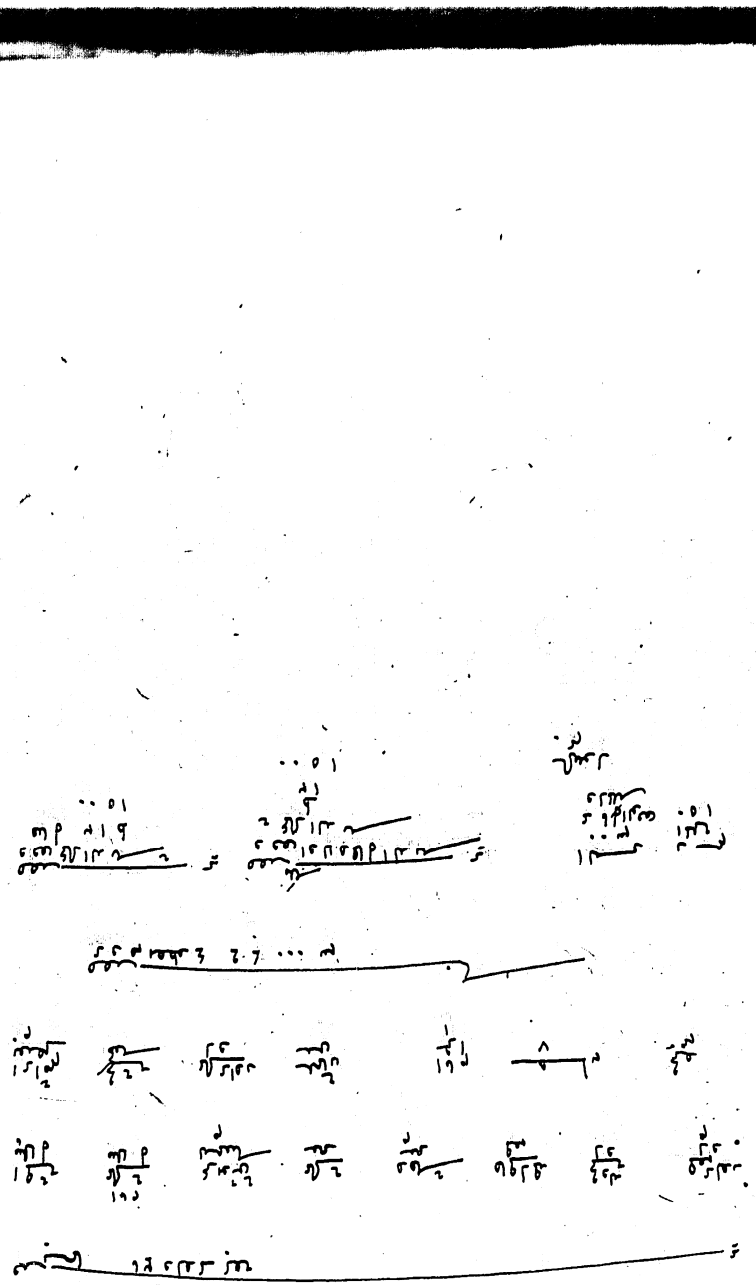

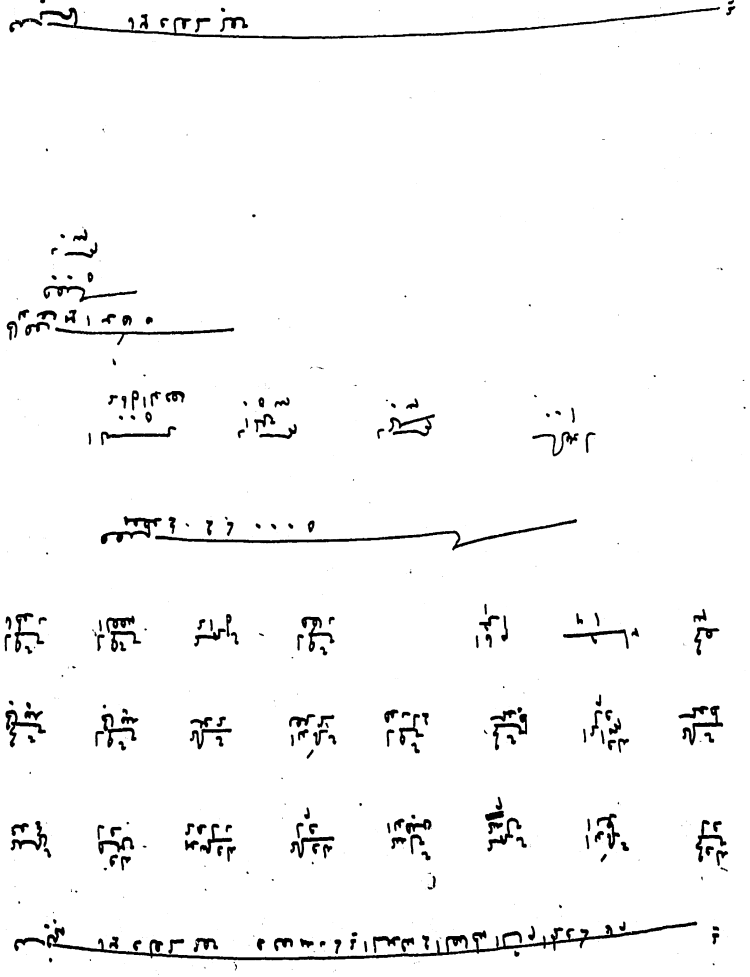

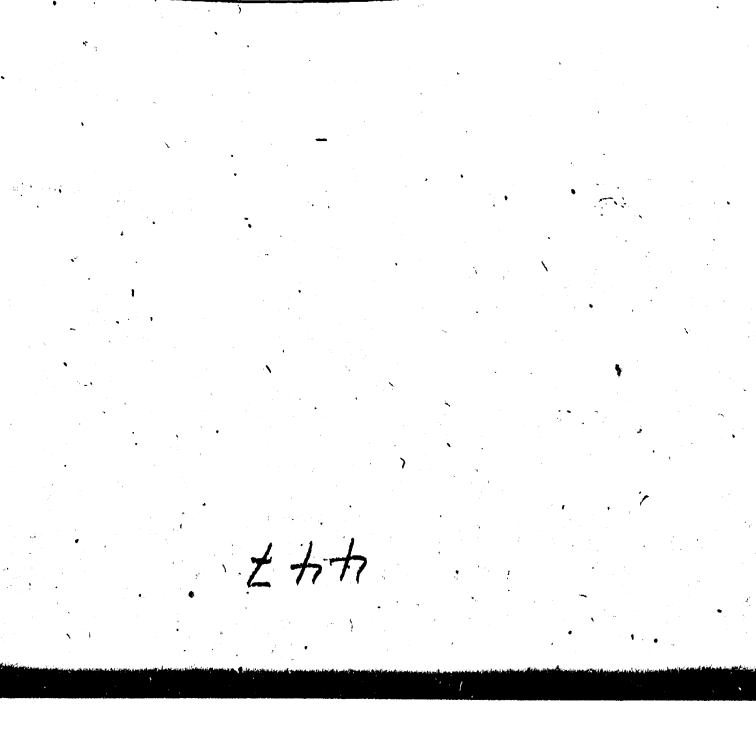

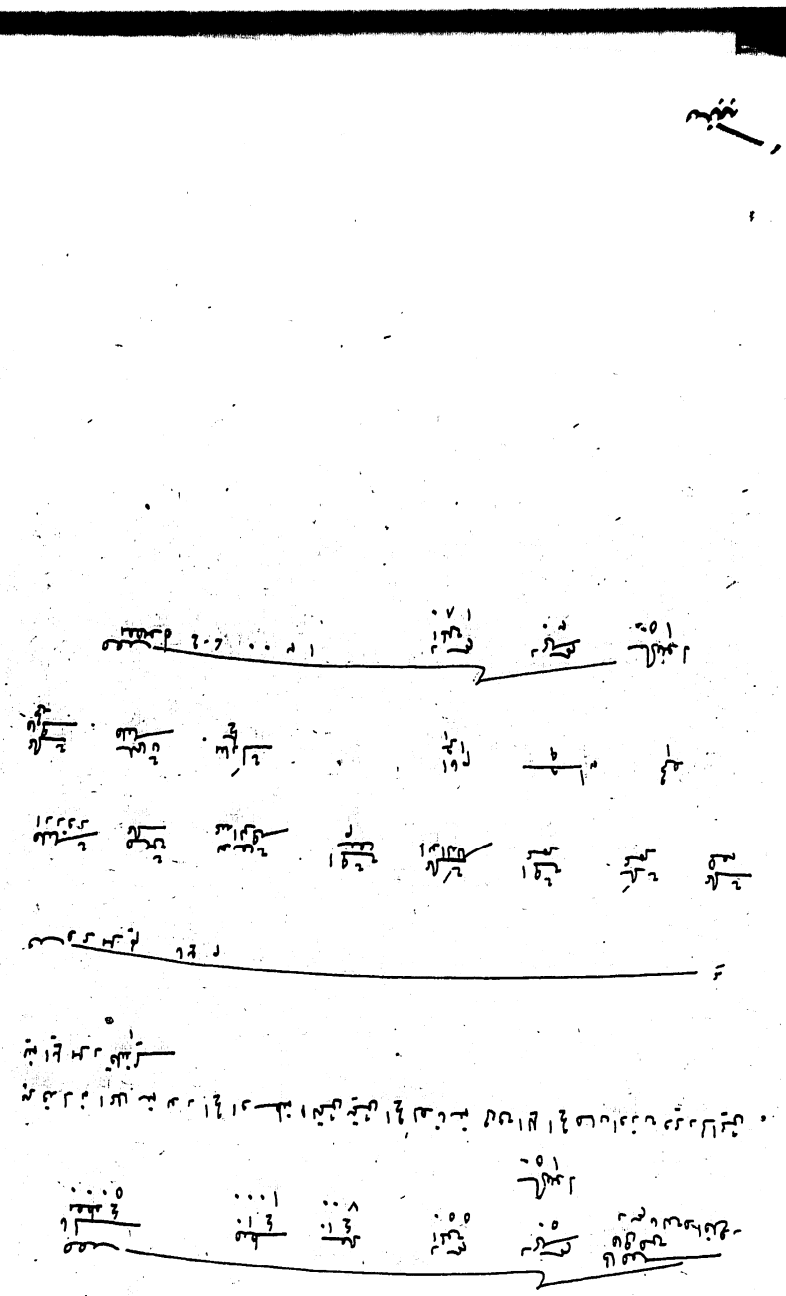

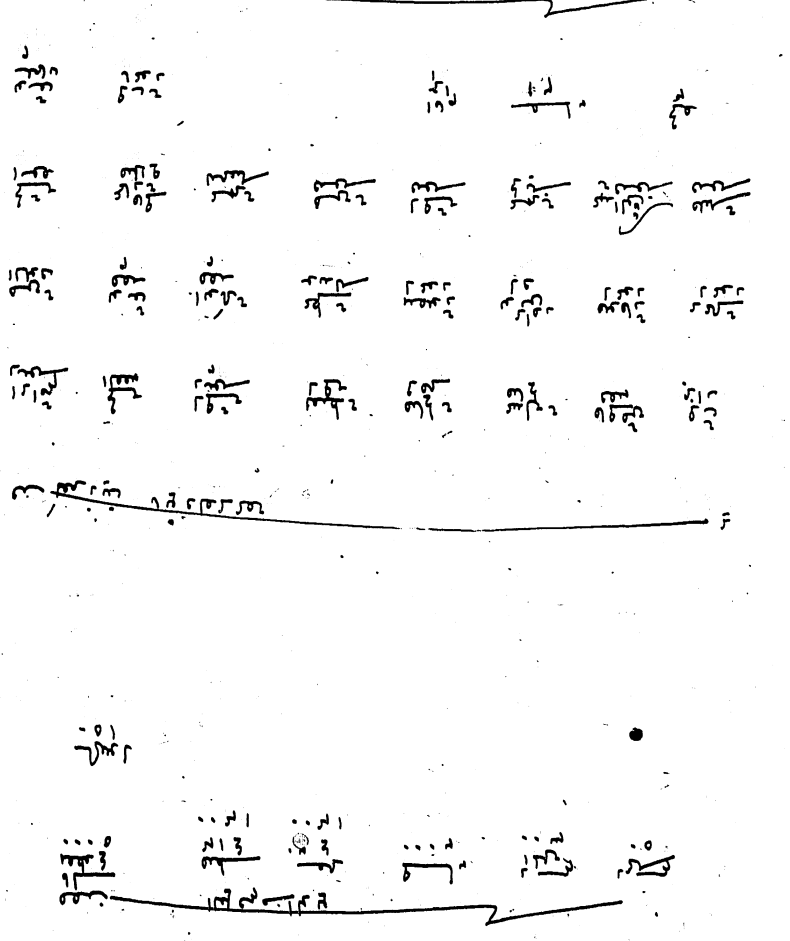

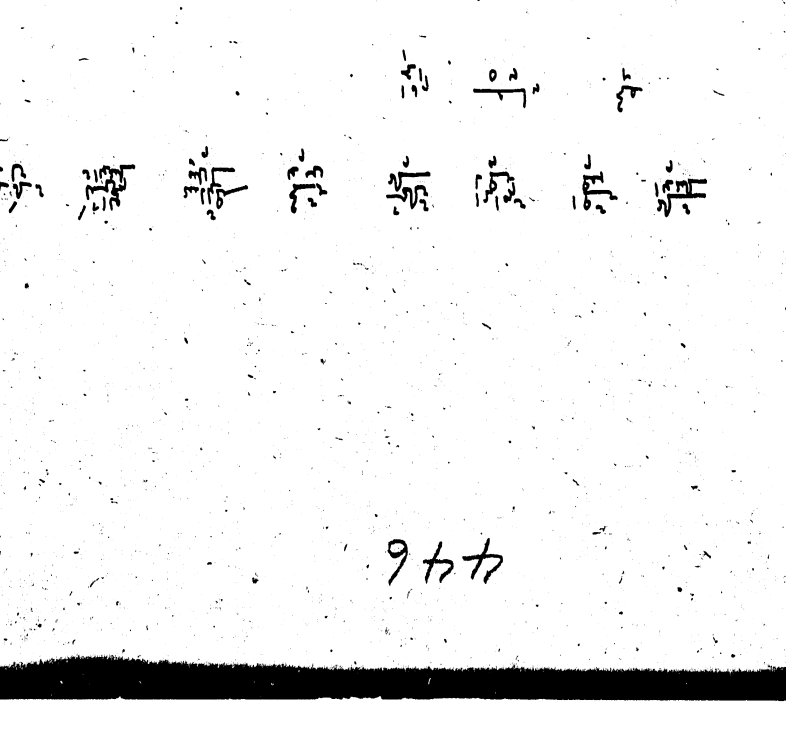

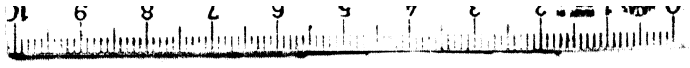

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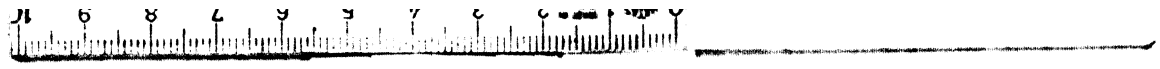

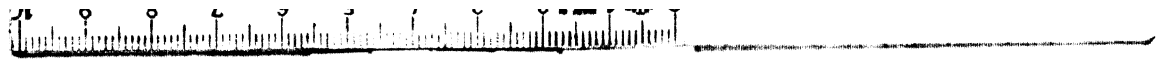

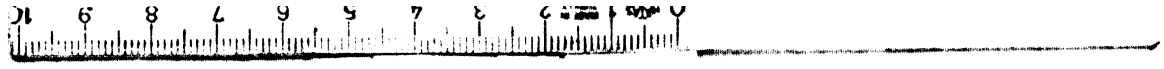

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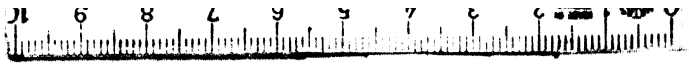

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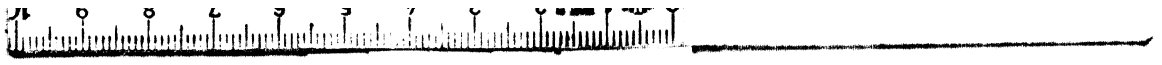

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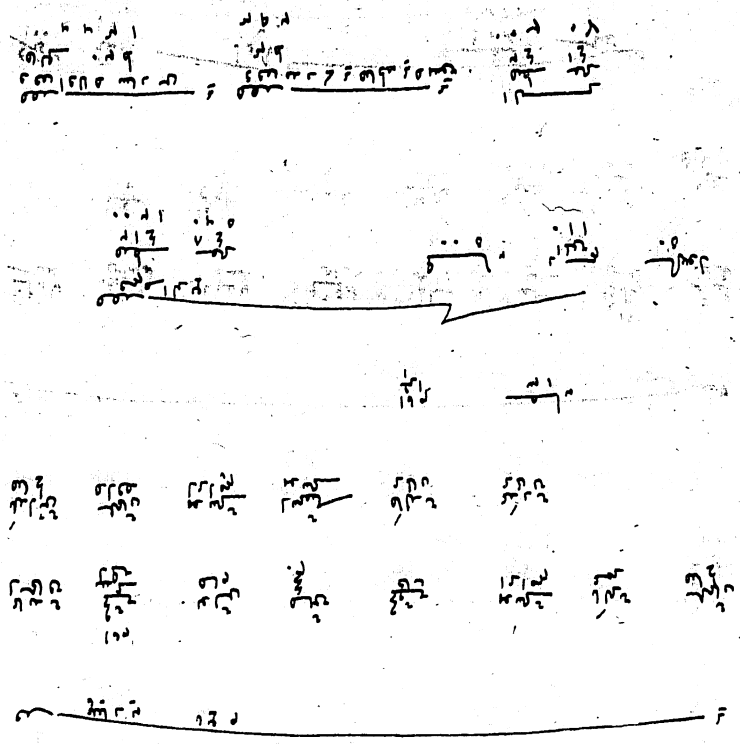

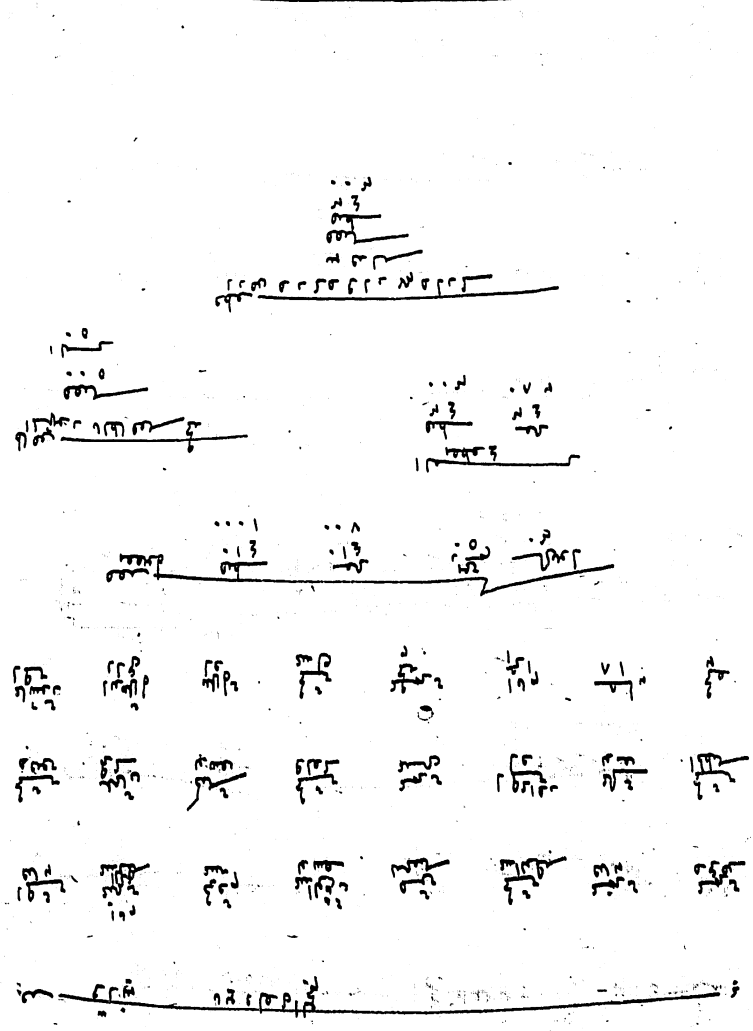

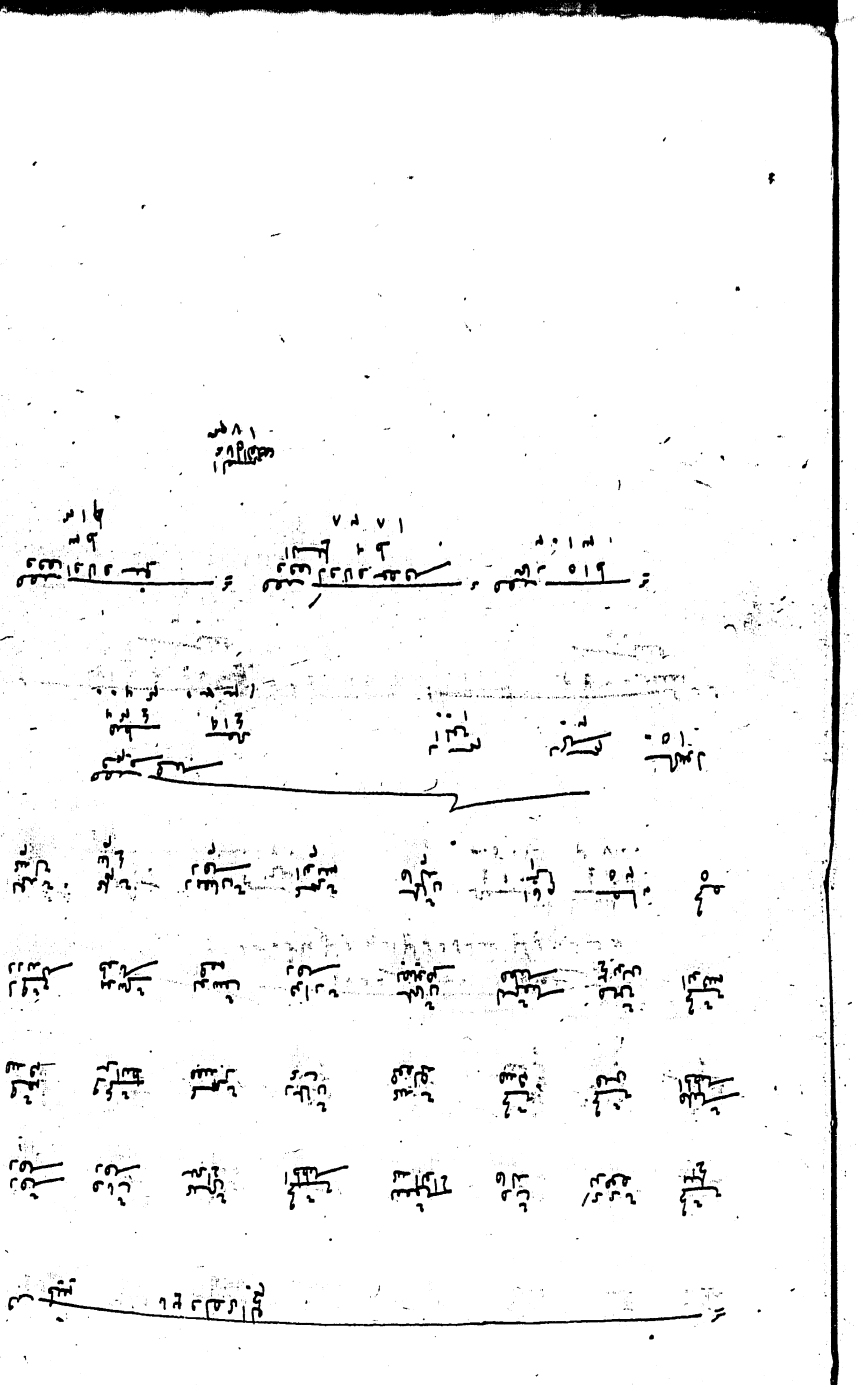

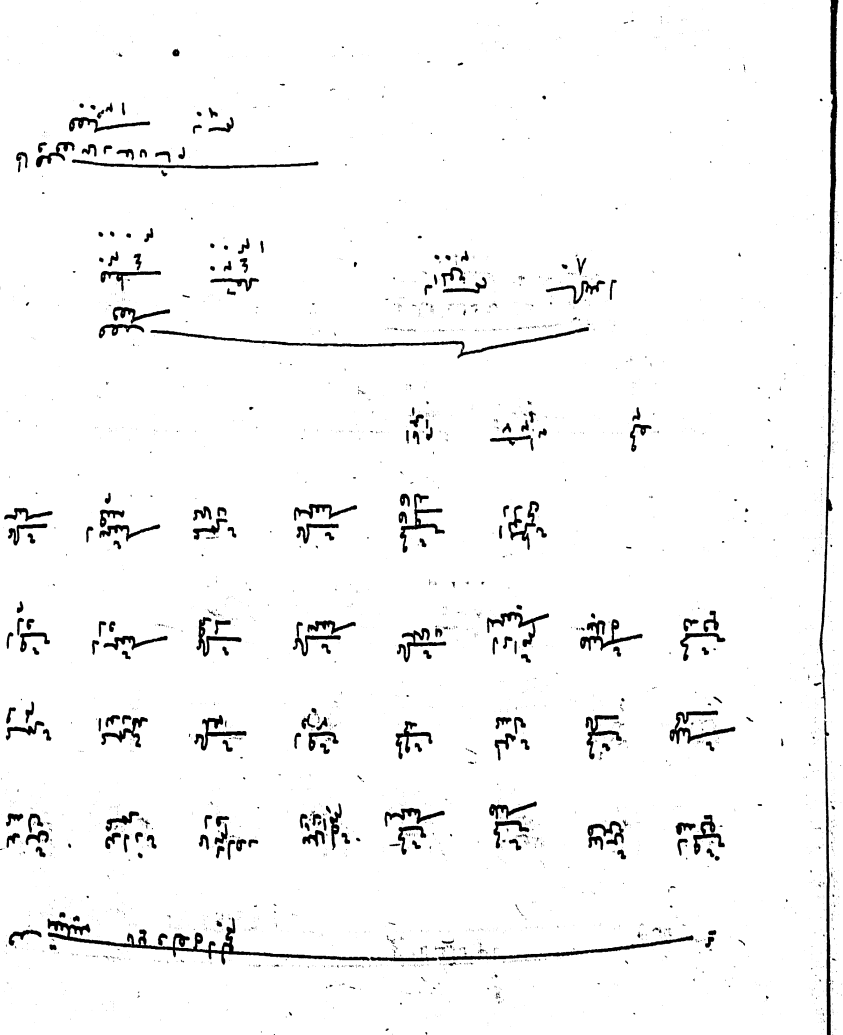

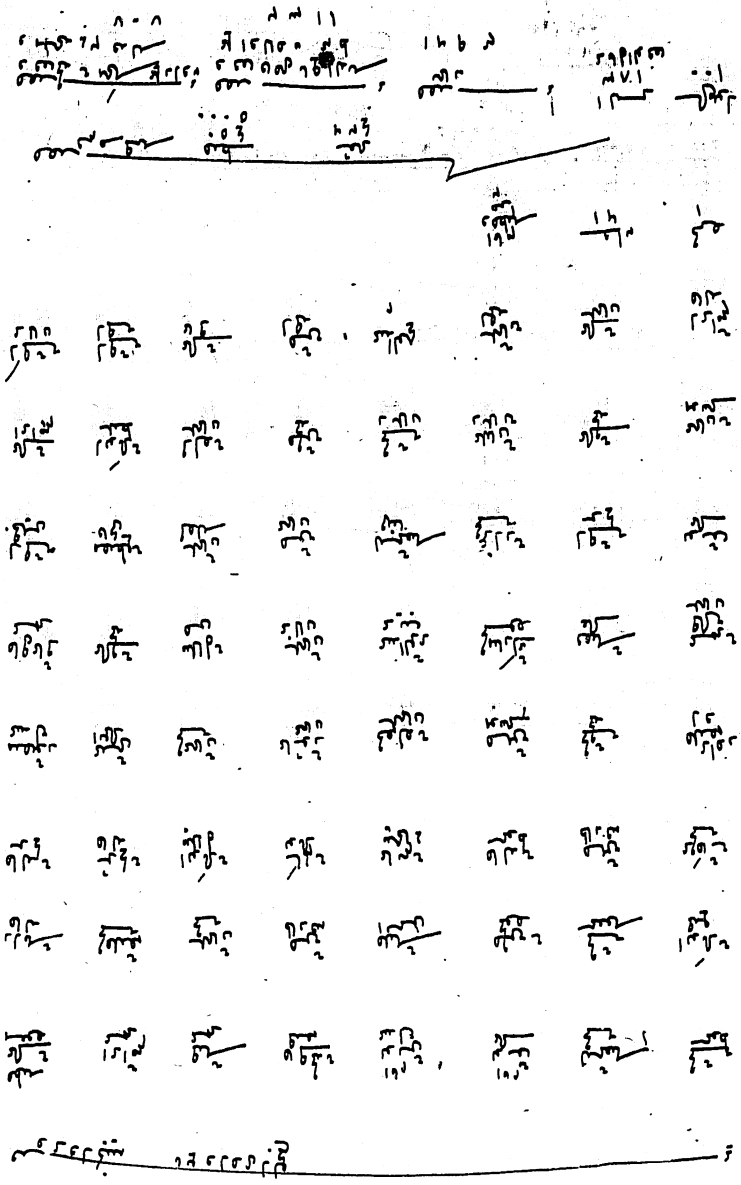

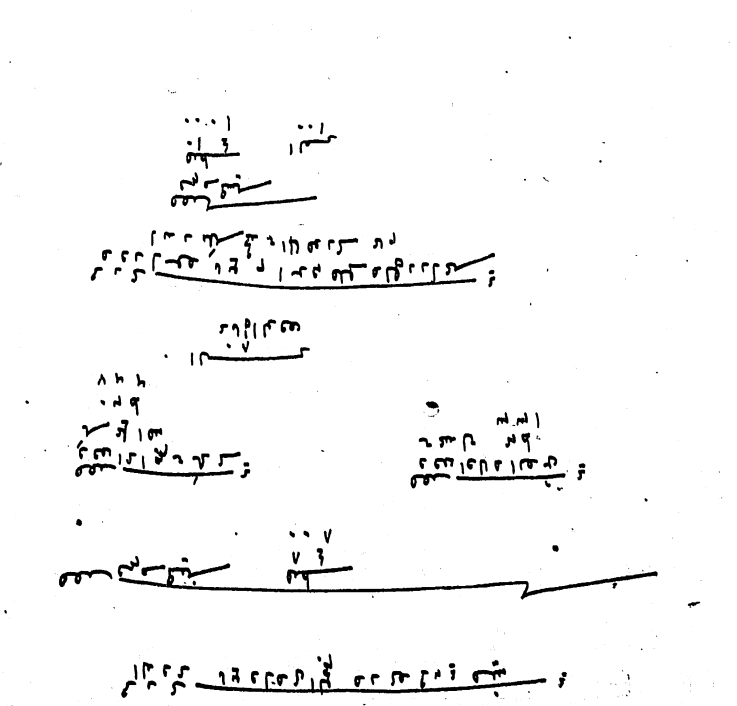

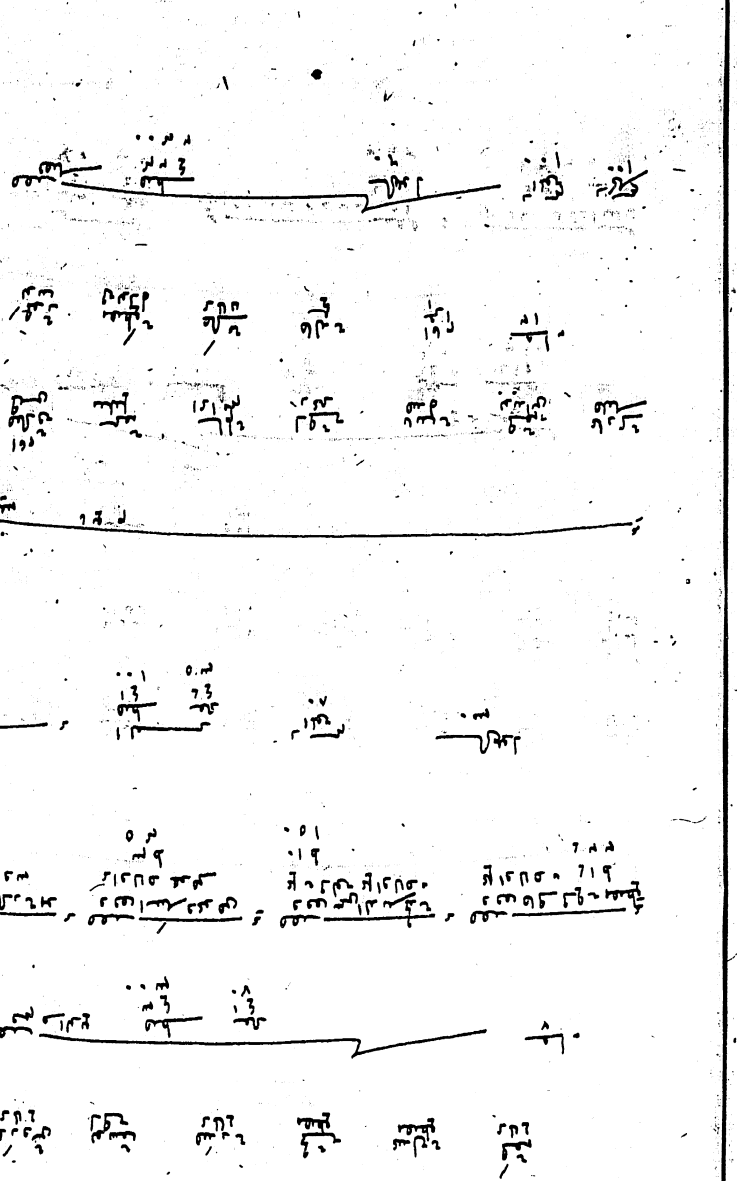

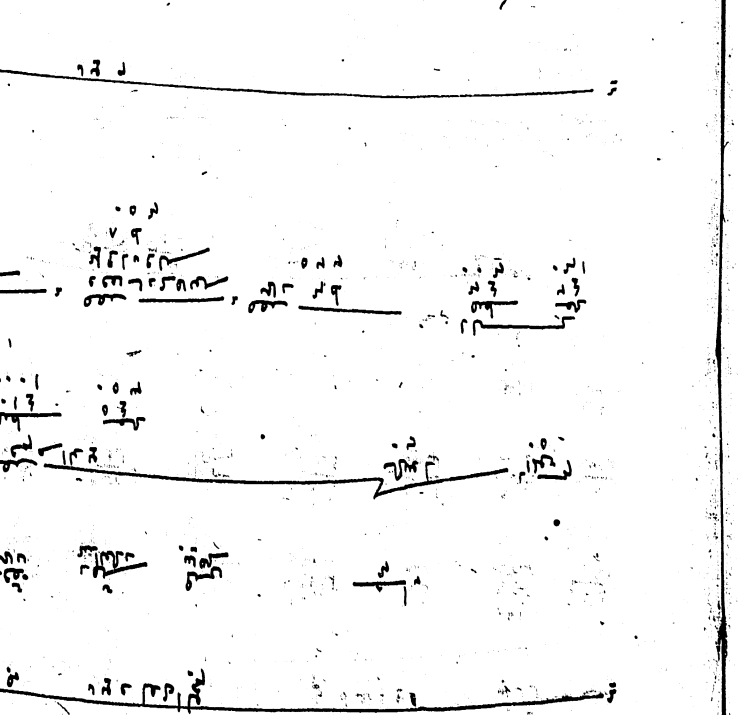

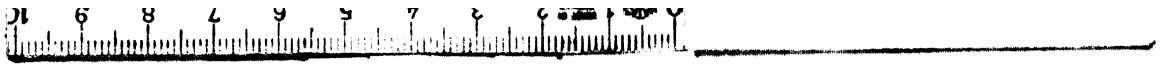

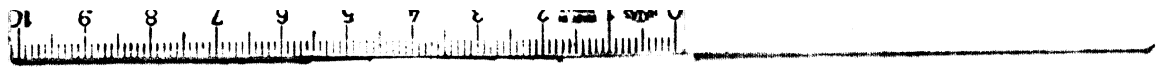

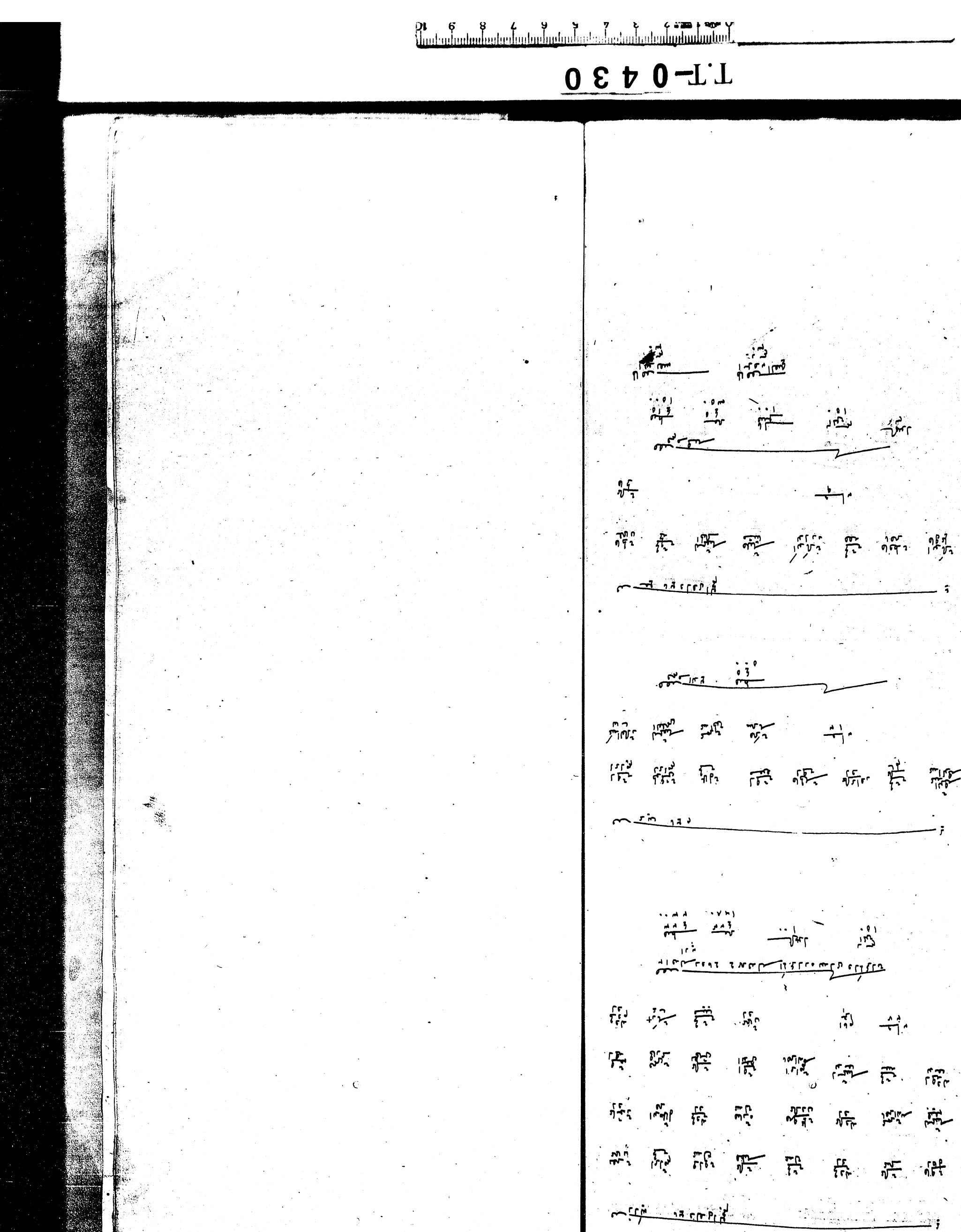

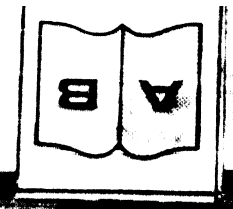

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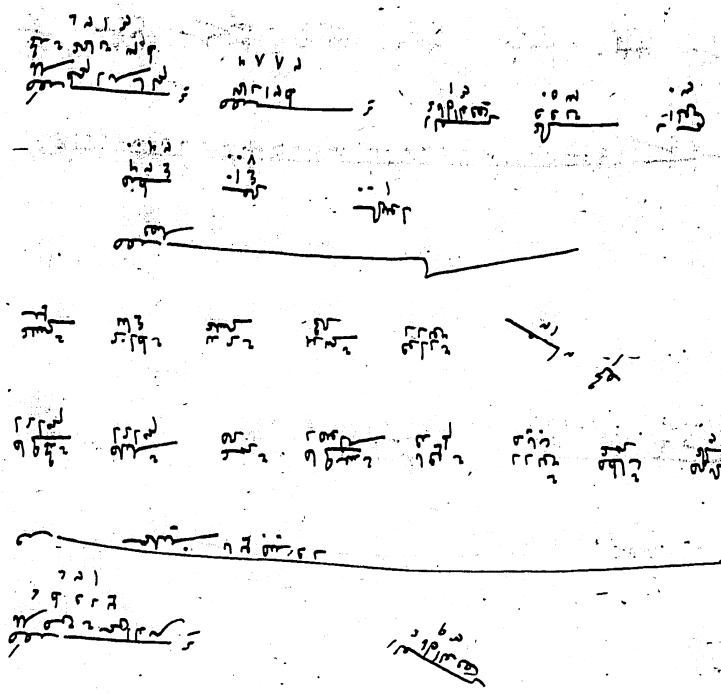

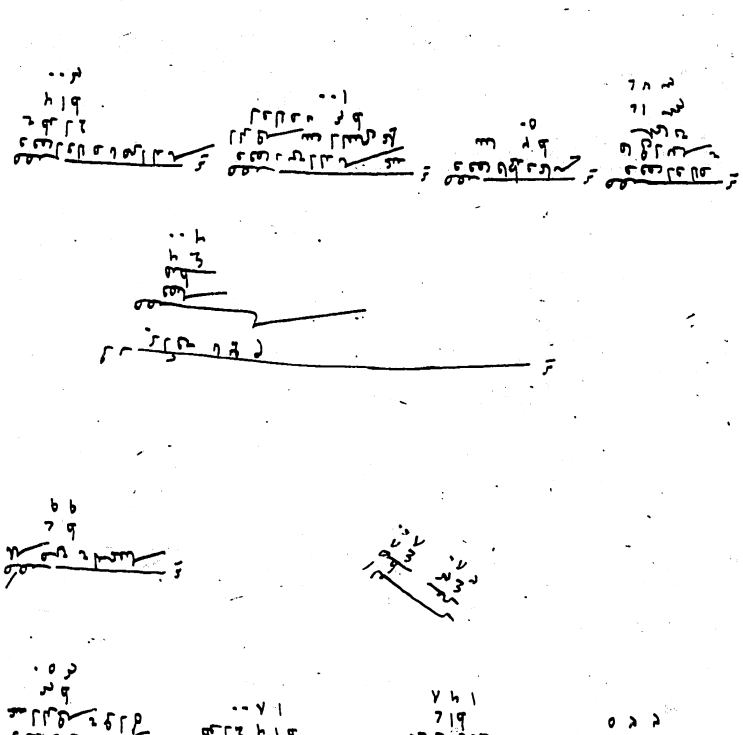

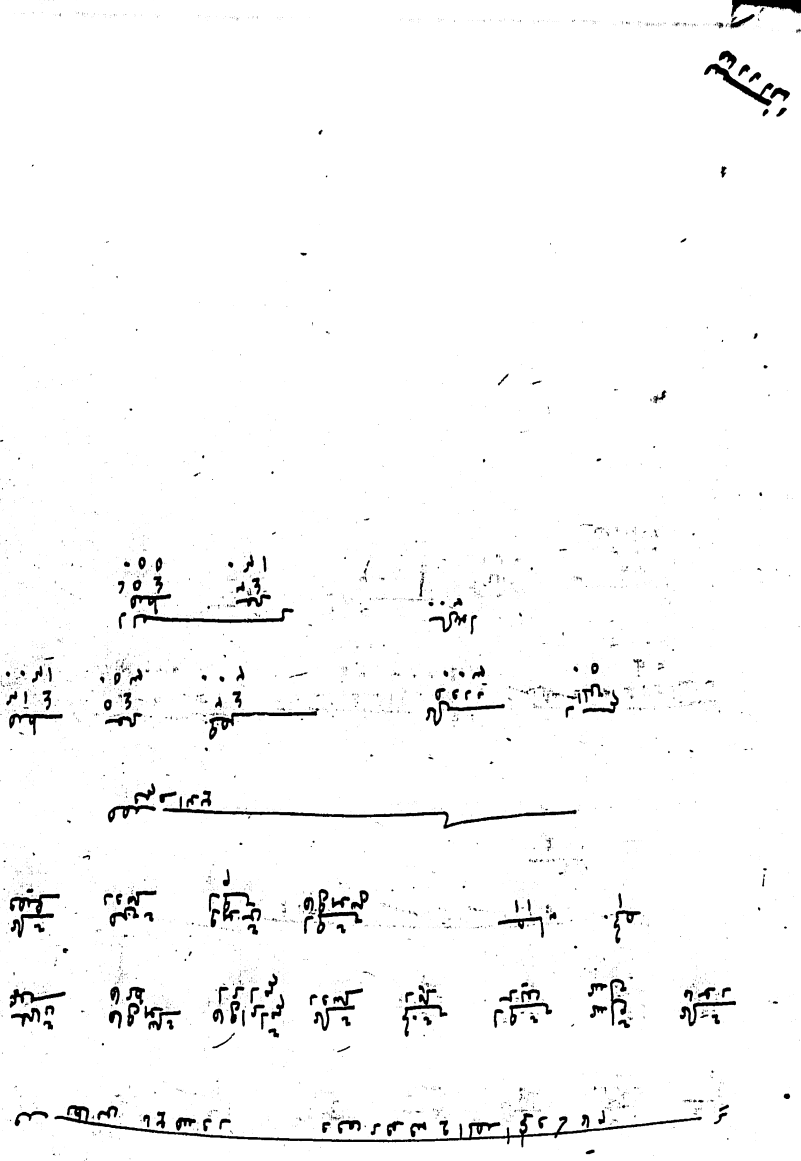

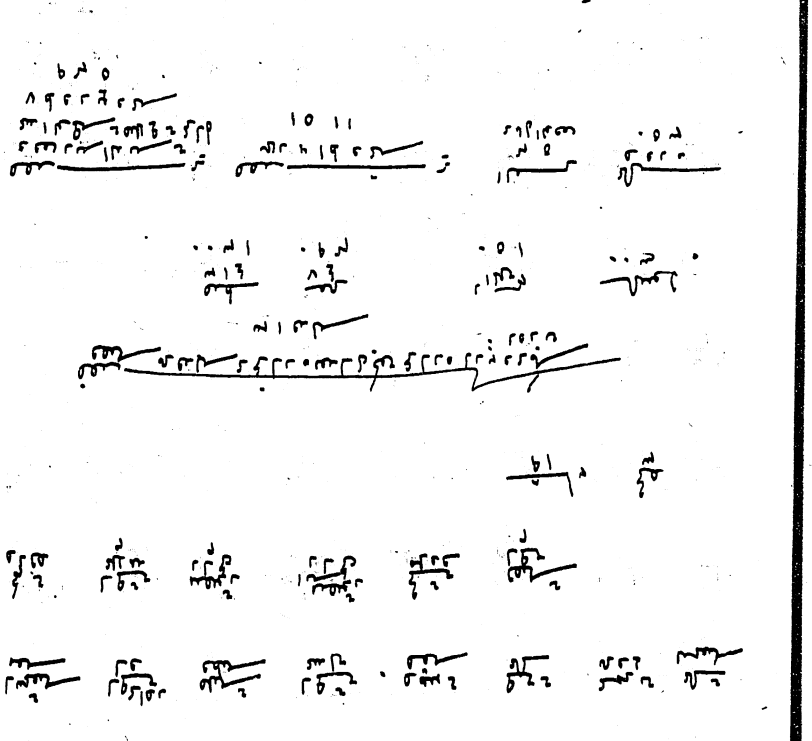

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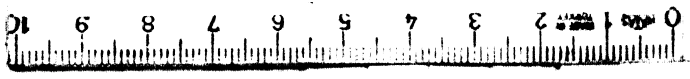

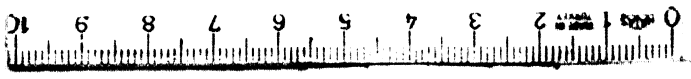

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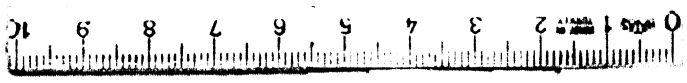

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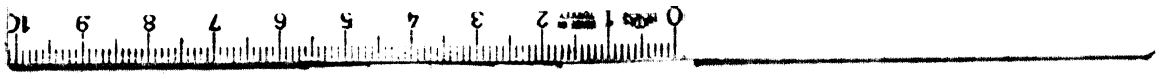

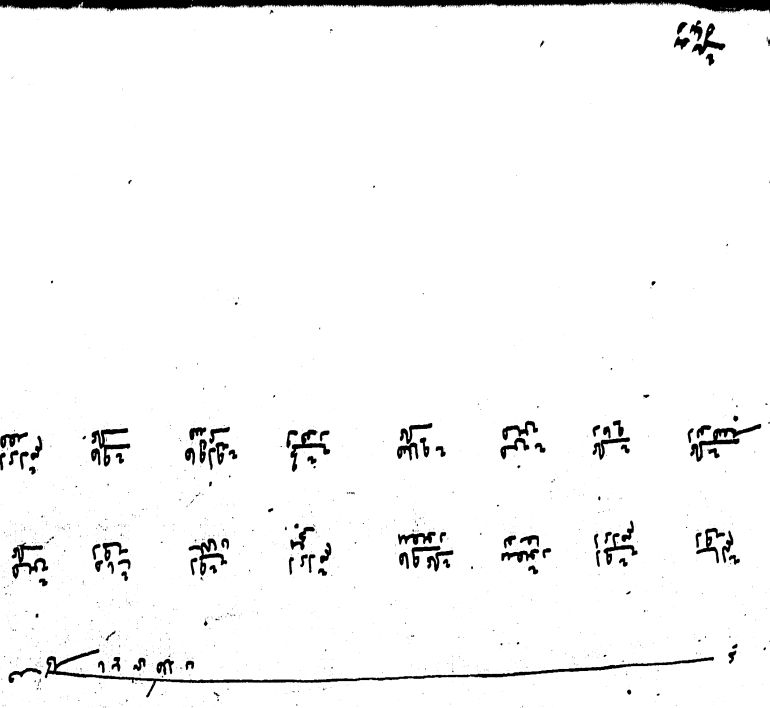

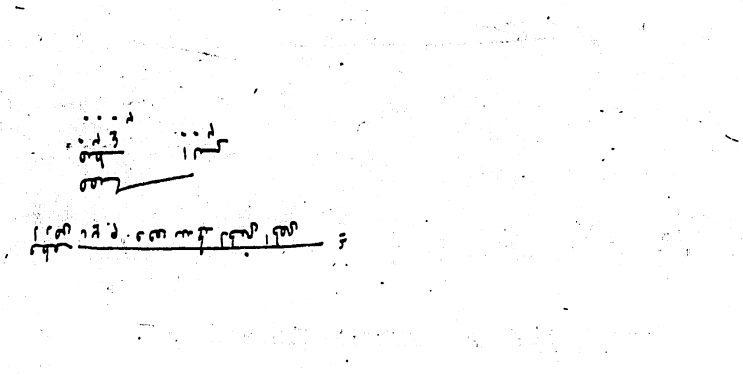

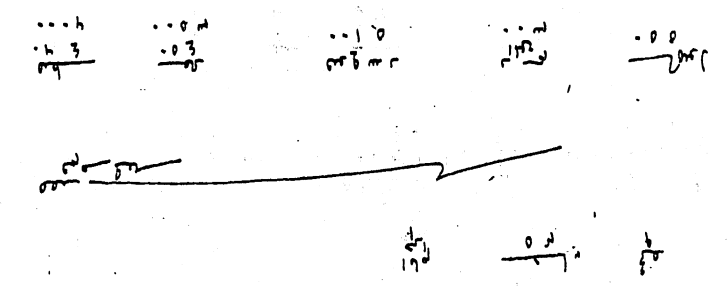

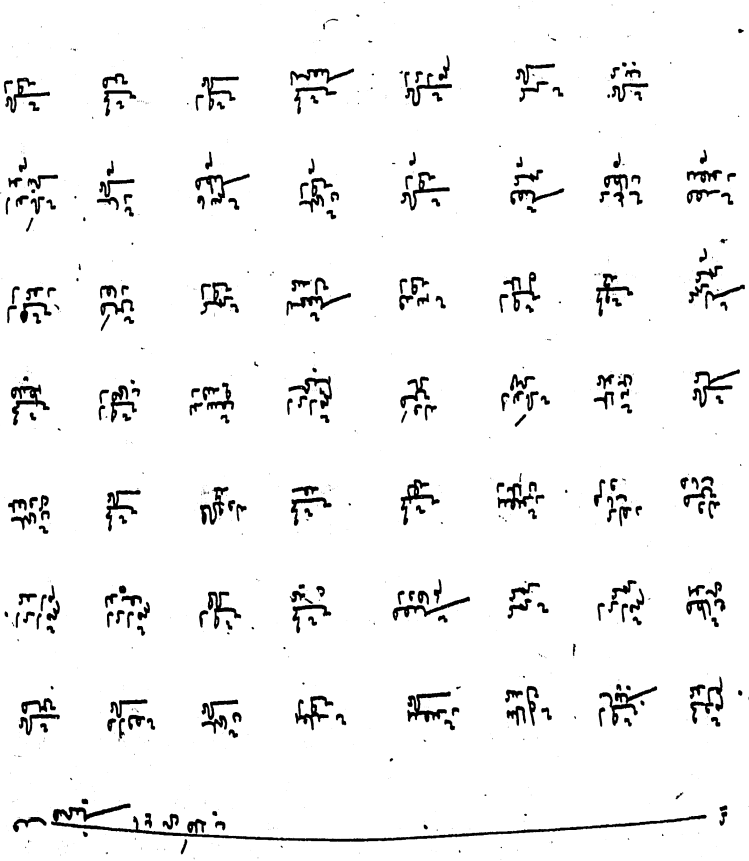

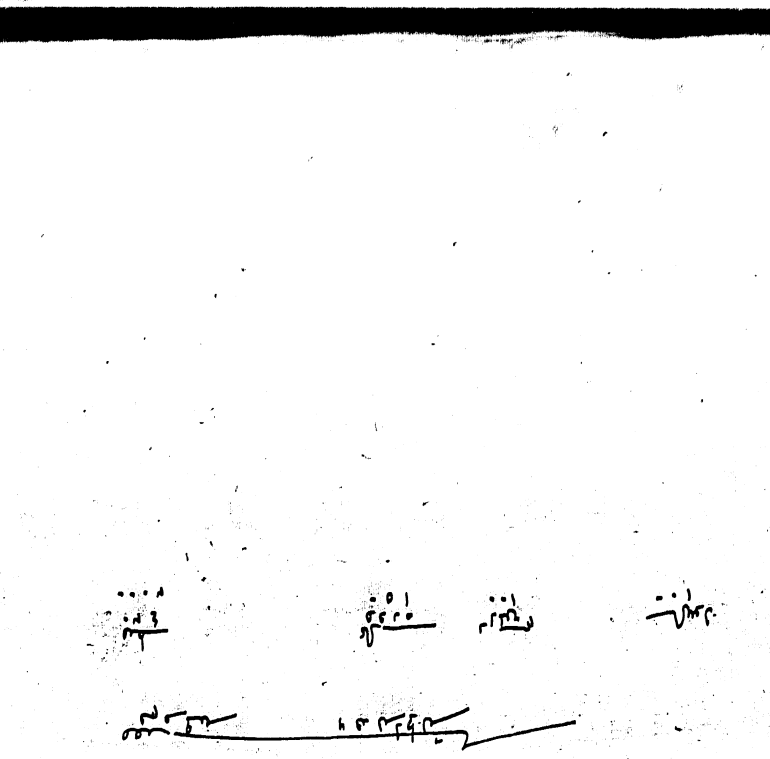

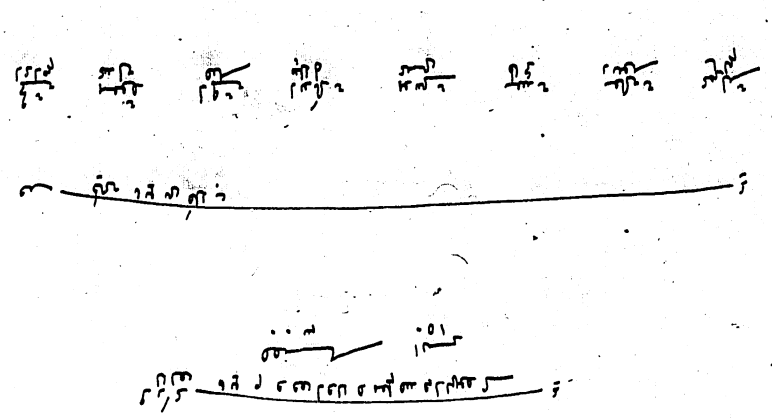

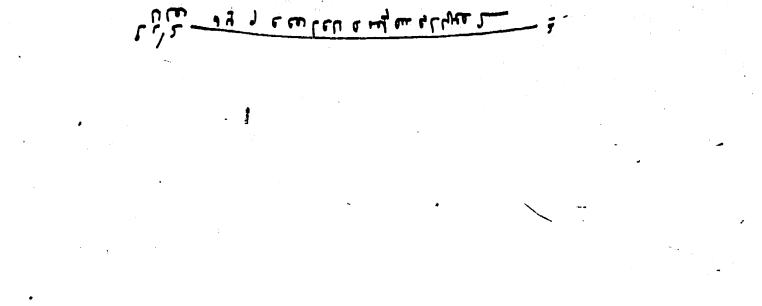

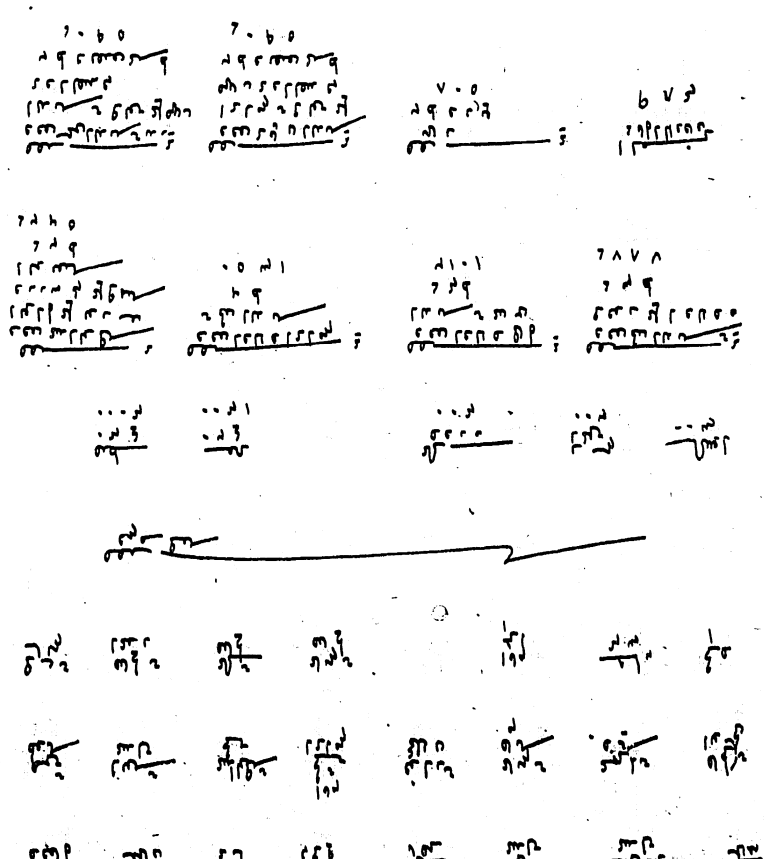

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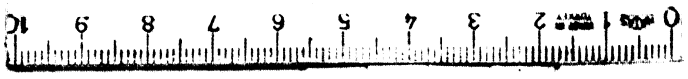

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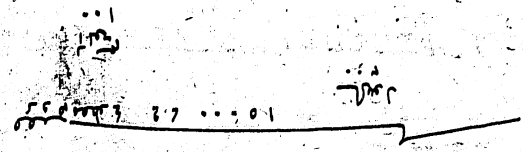

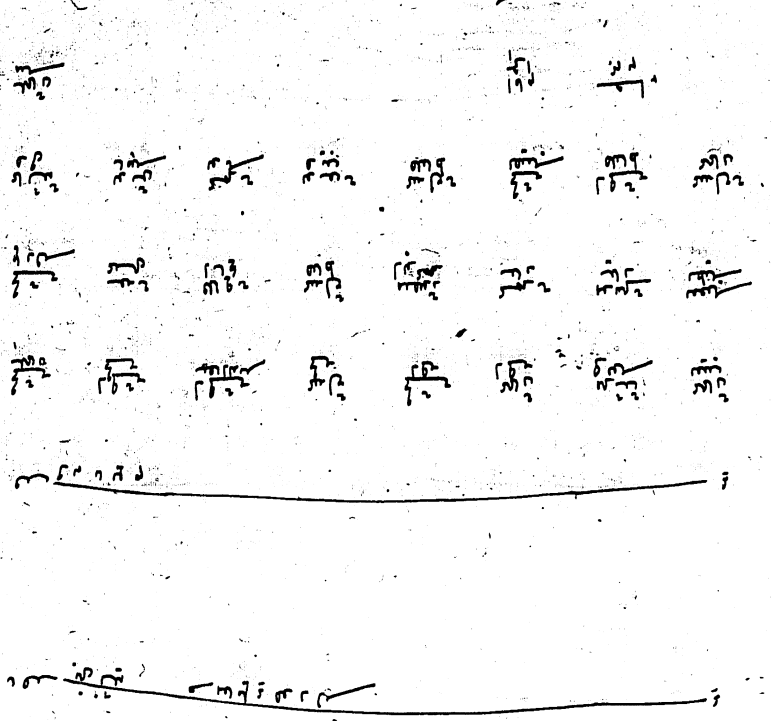

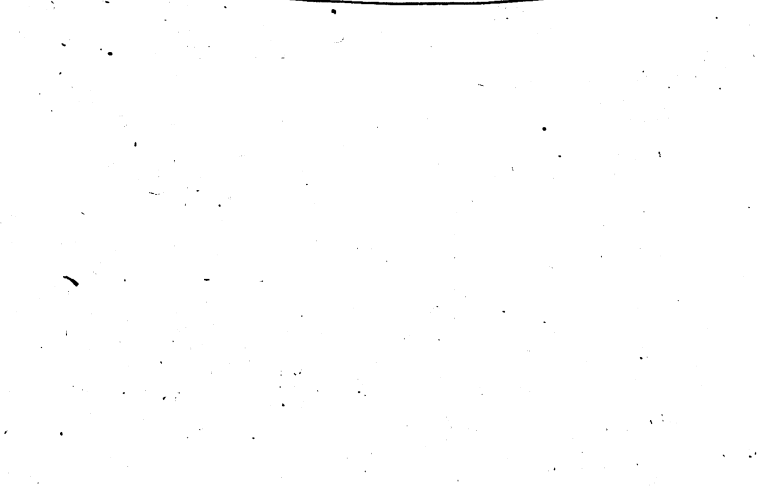

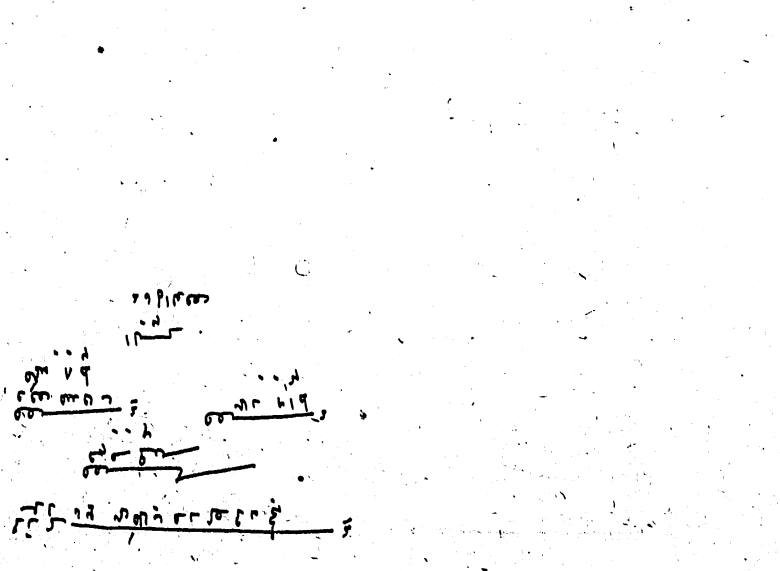

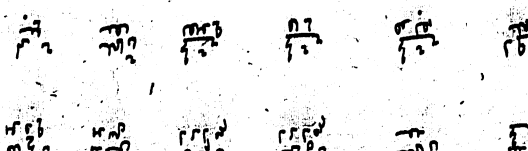

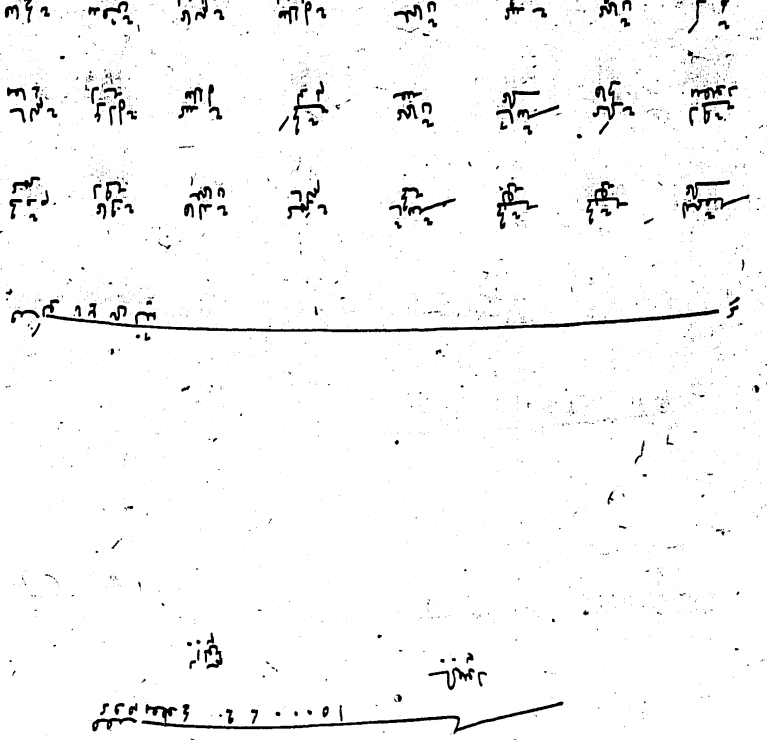

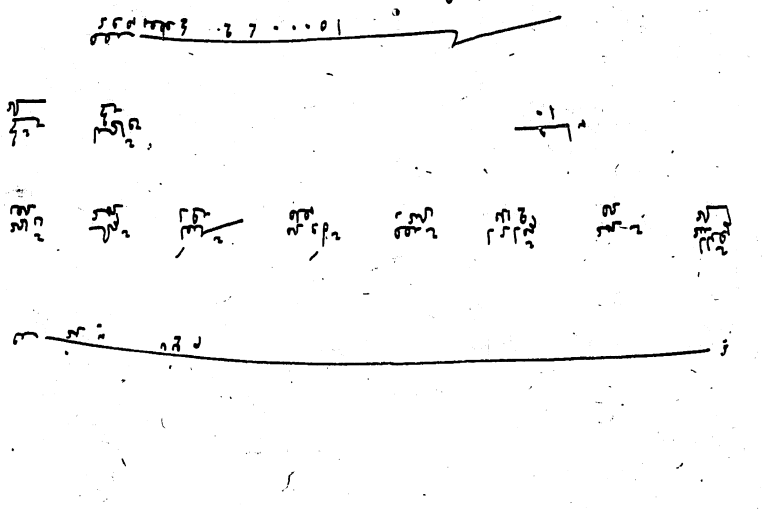

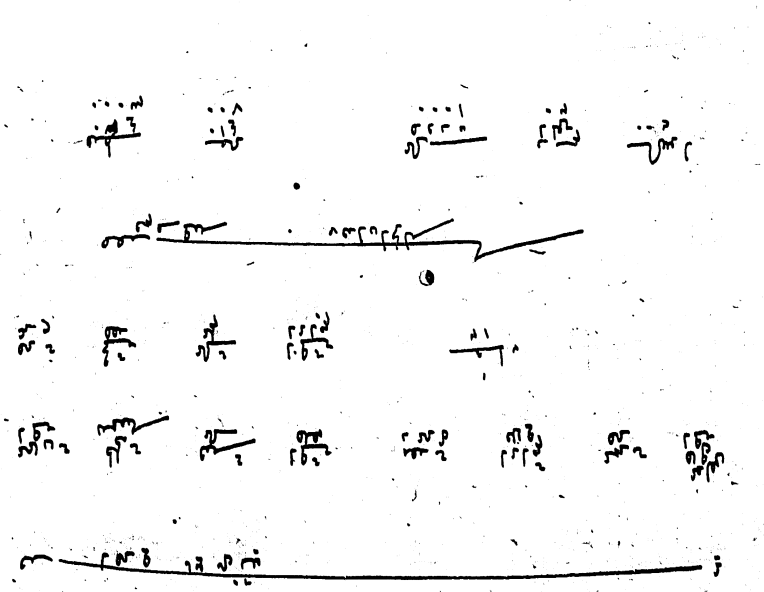

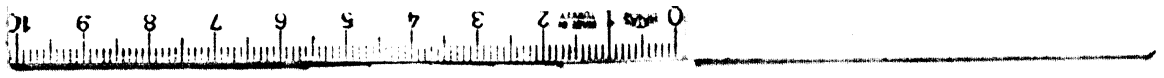

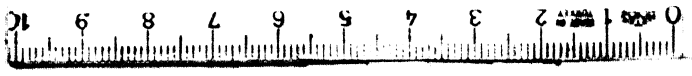

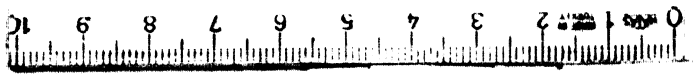

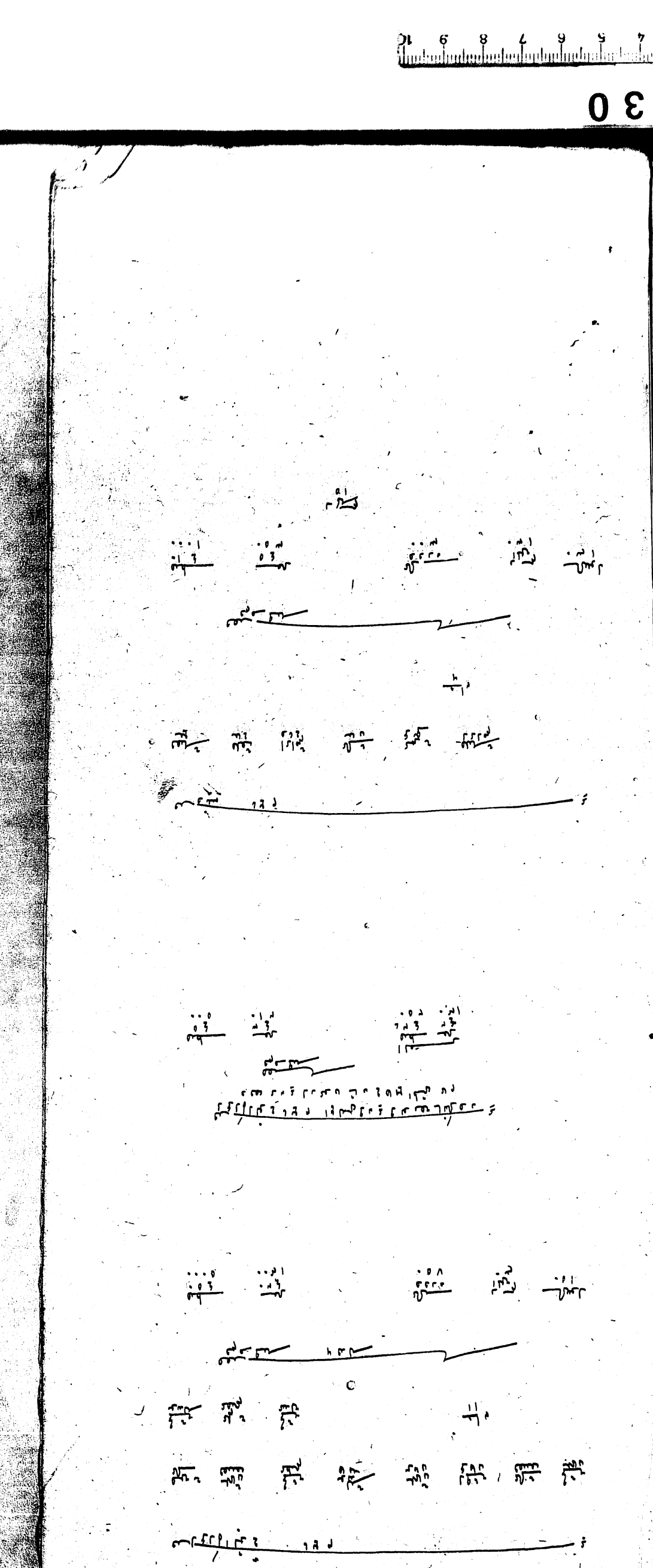

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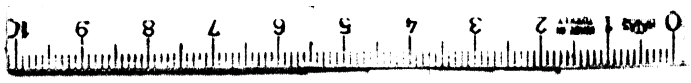

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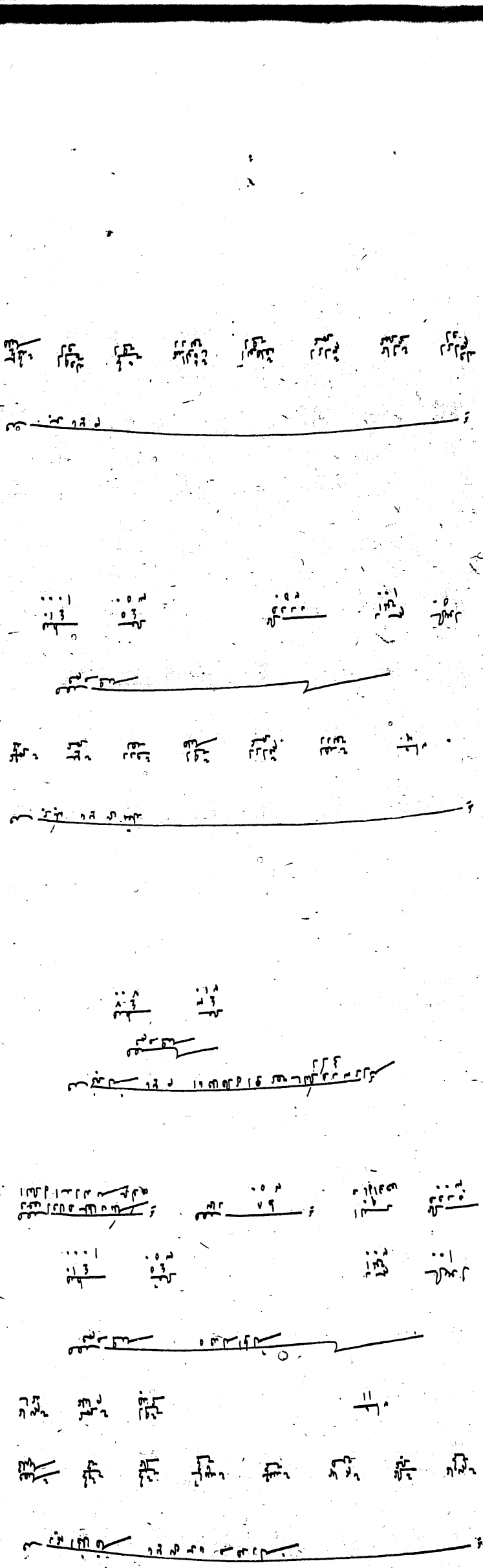

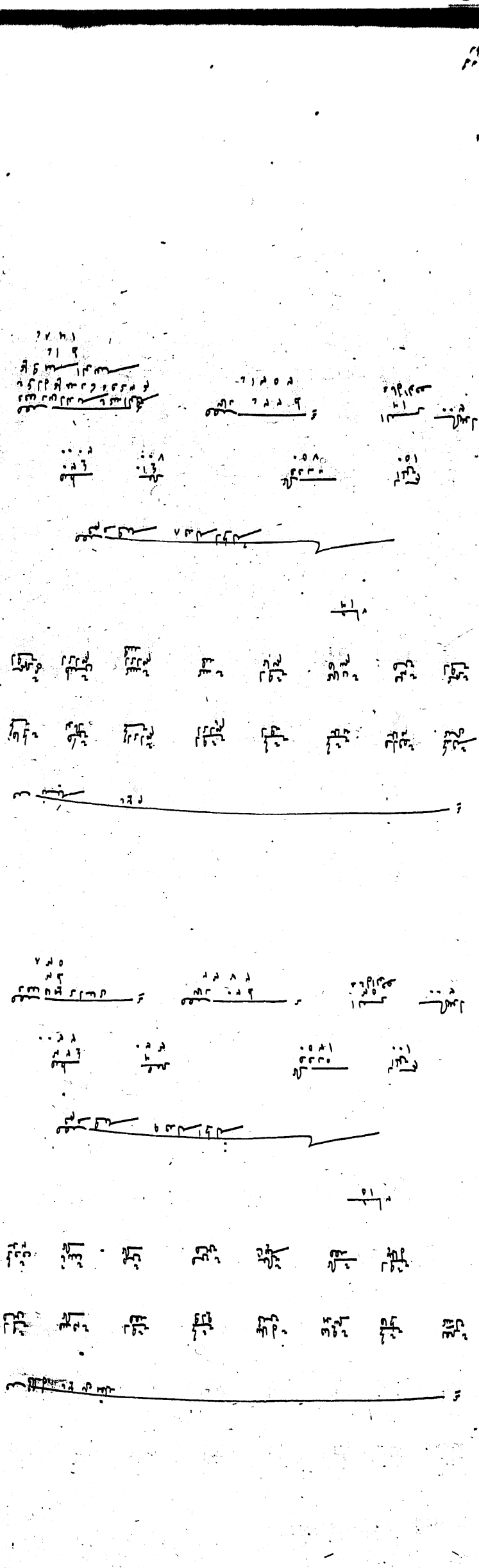

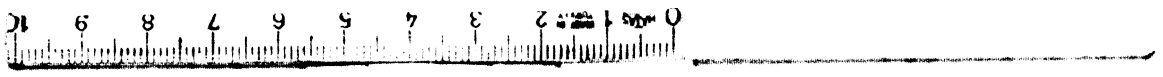

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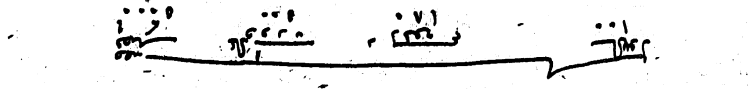

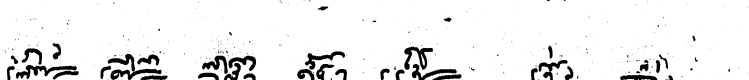

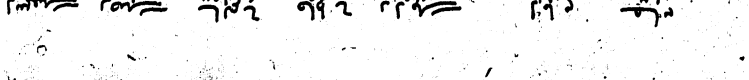

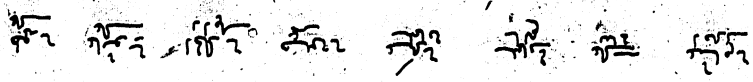

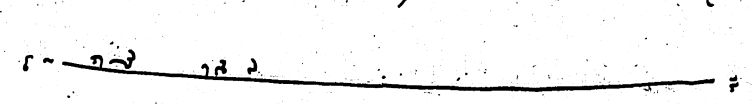

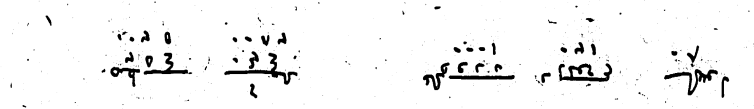

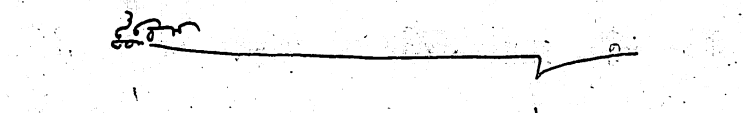

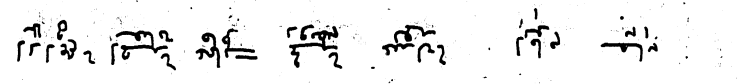

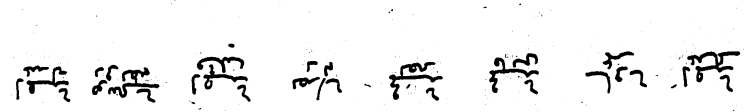

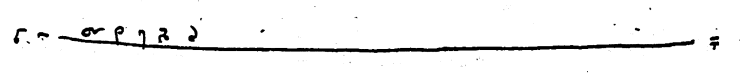

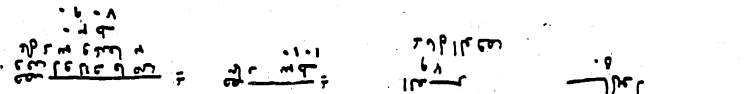

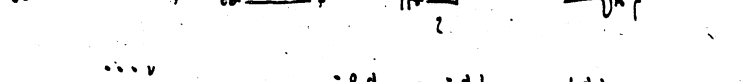

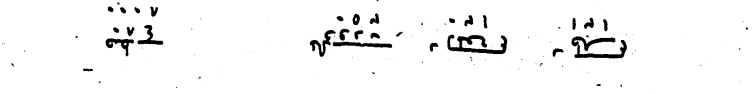

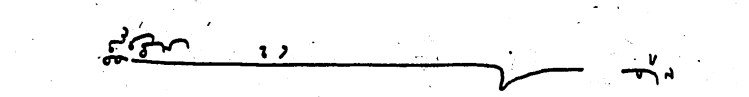

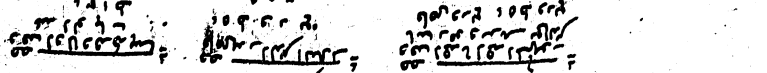

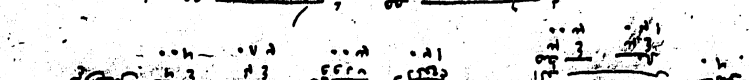

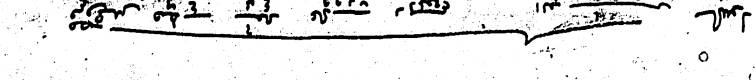

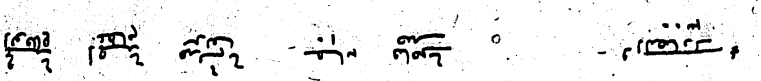

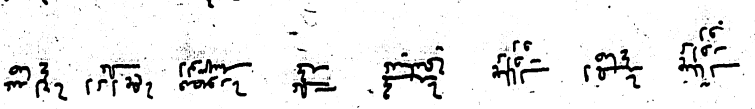

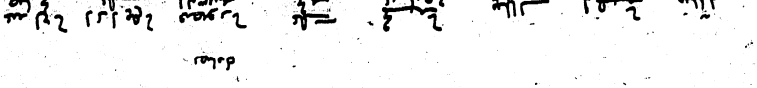

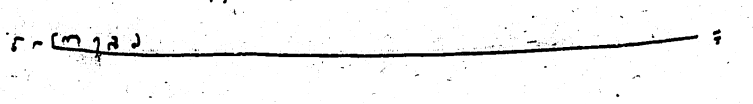

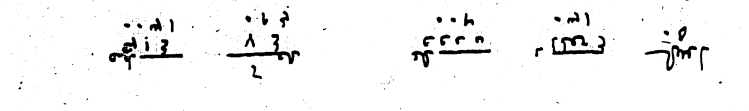

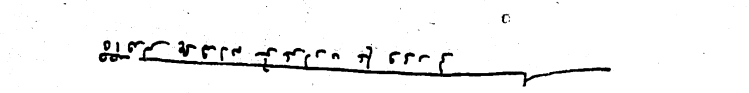

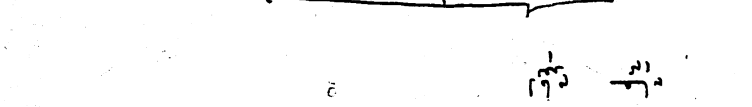

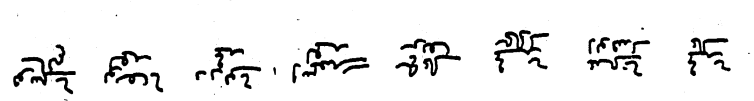

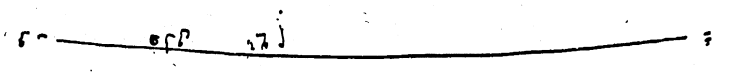

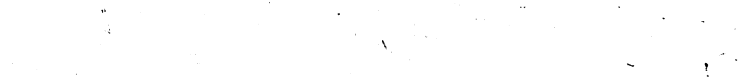

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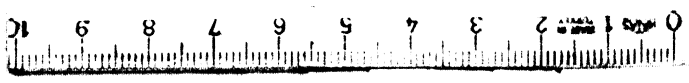

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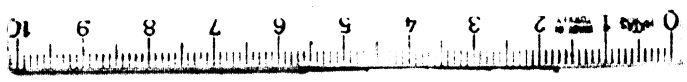

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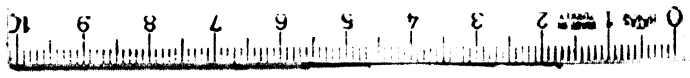

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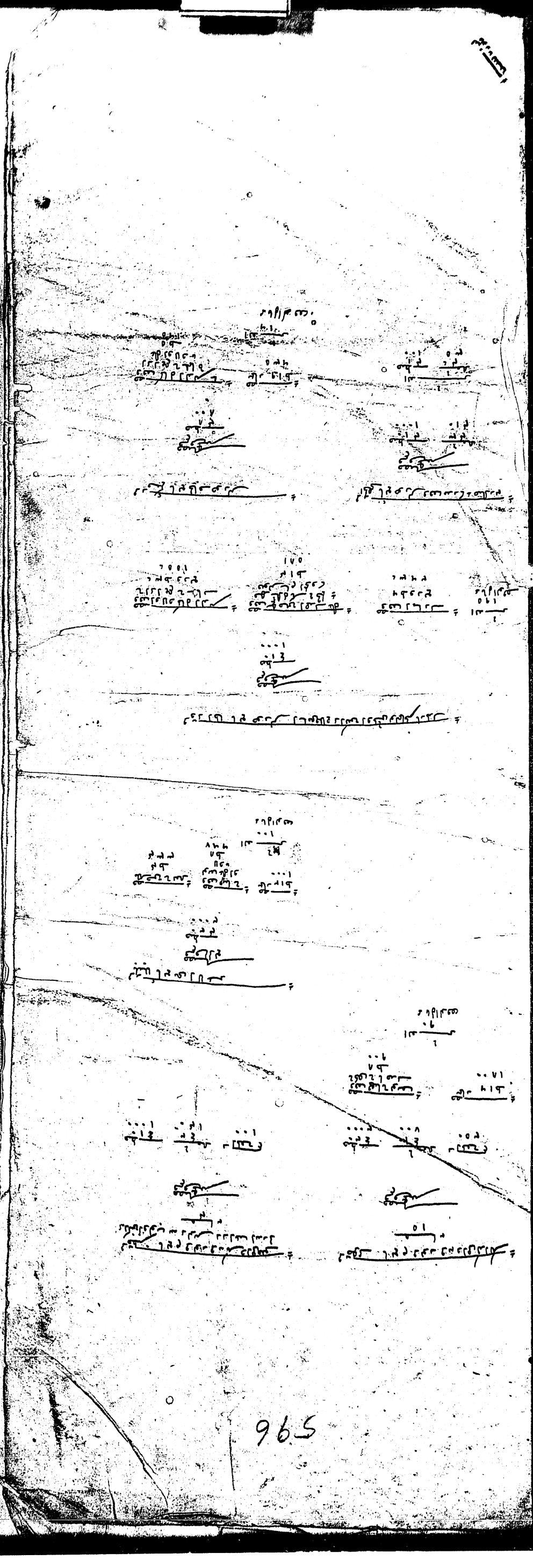

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